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GEOLOGICAL SOCIETY OF AMERICA
SPECIAL PAPERS
NUMBER 23

BIBLIOGRAPHIC INDEX
OF
NORTH AMERICAN DEVONIAN
CEPHALOPODA

BY
E. M. KINDLE
AND
A. K. MILLER

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PREFACE

The present publication is the first unit to be issued of a bibliographic index which is intended to fill the gap between Weller's *Bibliographic index of North American Carboniferous invertebrates* and Bassler's *Bibliographic index of American Ordovician and Silurian fossils*. Other units, of which there will be nine, are to be published in the order in which they are completed.

Except for accidental omissions, references are included to all literature on North American Devonian cephalopods published prior to January 1, 1939. However, like all works of its kind, this index is almost certainly incomplete. The writers will appreciate having errors and omissions called to their attention, so that, if a second edition of this work is published, it will be as nearly accurate and complete as possible.

The portions of this index that deal with ammonoids appear to be based almost entirely on the junior author's monograph of the *Devonian ammonoids of America*, but, as a matter of fact, the manuscript for the present publication was completed first. The order of publication was deliberately reversed so that references to the Monograph could be included in the index. It should perhaps be stated here that many of the concepts employed in the Monograph and therefore in the index are to a considerable extent the results of the summary works on Paleozoic ammonoids by such able paleontologists as Clarke, Delépine, Frech, Hyatt, Matern, Schmidt, Wedekind, Zittel, and particularly Schindewolf. Also, in the compilation of the index, full use was of course made of Frech's *Ammoneae Devonicae*, though for the American forms this catalogue is surprisingly incomplete. Bassler and Kellett's recently issued *Bibliographic index of Paleozoic Ostracoda* has served as a model for our work.

During the last 1½ decades a growing tendency has developed to restrict the scope of nautiloid genera, and it has become generally recognized that the number of existing genera and families is not so great as the diversity within the group justifies. A bibliographic index, however, is not the place to establish new biological units but should be merely a summary of what has been done. We have therefore of necessity allowed most of the genera and families concerned more latitude than we would in a monographic revision, for example. Also, for the sake of expedience we have used a few generic and family names, particularly *Acleistoceras*, *Michelinoceras*, and *Poterioceratidae*, in a very broad, inclusive sense.

Many of the older specific descriptions are not accompanied by illustrations and are not remarkable for their clarity or their completeness. A

proper understanding of a large percentage of the species represented by these descriptions can come only from a restudy of the types, if they have not been lost. In order not to delay the completion of the present work indefinitely, we have made no attempt to locate and restudy type specimens but have relied solely on the published information. When this information was so inadequate that considerable doubt existed as to the generic affinities of a species, we have indicated the uncertainty by the use of an interrogation point immediately after the generic name, but we probably have not used these points as freely as we should. The generally accepted classification of the nautiloid cephalopods is based primarily on the structure of the siphuncle. Since, in most of the older descriptions the nature of the siphuncle is not considered, it is in many cases very difficult, if not impossible, to determine from the literature the affinities of long-established species; we have of course classified such species to the best of our ability by comparing them with similar forms of which the siphuncular structure is known.

Mention should also be made of the more or less cordate or shield-shaped bodies with concentric growth-lines, which Clarke and others regarded as phyllopod crustaceans and placed in the genera *Spathiocaris*, *Cardiocaris*, *Discinocaris*, *Pholadocaris*, and others. Many of these are known from the Devonian of New York, and various paleontologists have at one time or another regarded certain of them as goniatite opercula. However, we are very uncertain as to their affinities, and, after careful consideration, have decided not to include references to them in this bibliographic index.

A list of the various North American Devonian formations is included in this first unit of the index to be published, and the approximate areal distribution and position in the Devonian system of each of these formations are indicated. This list will, of course, not be republished in the succeeding units.

The senior author is indebted to Dr. R. S. Bassler for access to a set of references to American Paleozoic fossils in the United States National Museum. Dr. J. M. Weller kindly permitted the use of references from a manuscript Devonian card catalogue compiled by the late Professor Stuart Weller. Miss A. E. Wilson helped with the abstracting of the literature during one stage of the work. The United States National Research Council contributed to the cost of the typing. Other financial assistance, which made this work possible, was received from The Geological Society of America, the Wagner Free Institute of Science, and, particularly, Mr. F. O. Thompson of Des Moines.

ABBREVIATIONS

(The same abbreviation is used for variant forms and like terms in other languages.)

Abh.....Abhandlungen	Colo.....Colorado
Abstr.....Abstract	Com.....Comité
Abt.....Abteilung, Abtheilung	Comm.....Communication
Acad.....Academie	Comp.....Comparative
Accad.....Accademia	Cong.....Congress
Adv.....Advancement	Contr.....Contributions
Akad.....Akademie	
Ala.....Alabama	Dec.....Decade
Am.....American	Denksch.....Denkschriften
Anim.....Animalischen	Dept.....Department
Ann.....Annals, Annual	Descr.....Description
Appd.....Appendix	Deutsch.....Deutschen
Arch.....Archiv, Archivos	Dev.....Devonian
Ark.....Arkansas	Dist.....District
Art.....Article	Doc.....Document
Assoc.....Association	Dyn.....Dynamique
Avanc.....Avancement	
	Ed.....Edition
Bd.....Band	Eng.....English
Beil.....Beilage	Ergeb.....Ergebnisse
Beitr.....Beitrage	Ex.....Executive
Belg.....Belgique	Exp.....Expedition, Exposition
Ber.....Berichte	Expl.....Explanation
Berg.....Bergakademie	Fasc.....Fascicle
Biol.....Biological	Fig., Figs.....Figure, Figures
Böhm.....Böhmischen	Form.....Formations, Formation- skunde
Briefl.....Briefliche	Foss.....Fossils
Bull.....Bulletin	
Bur.....Bureau	Ga.....Georgia
	Gen... ..General
C. R.....Compte Rendu	Geog.....Geography
Cab.....Cabinet	Geogn.....Geognostisch
Cal.....California	Geol.....Geology, Geological, Geologischen
Can.....Canadian	Ges.....Gesellschaft
Carb.....Carboniferous	Gouvt.....Gouvernement
Cat.....Catalogue	Graf.....Grafen
Cent.....Central	Grundz.....Grundzuge
Centr.....Centralblatt	
Chap.....Chapter	Handb.....Handbook
Char.....Characteristic	Herausg.....Herausgegeben
Circ.....Circle, Circular	Hist.....History
Cl.....Classe	
Co.....County	

- Ill..... Illinois
 Illus..... Illustrated
 Imp..... Imperial
 Ind..... Indiana
 Inst..... Institute
 Int..... International
 Ital..... Italian, Italica

 Jahrb..... Jahrbuch
 Jahrg..... Jahrgang
 Jour..... Journal

 K..... Königlich
 Kais..... Kaiserlichen
 Kan..... Kansas
 Ky..... Kentucky

 Lab..... Laboratories
 Landes..... Landesanstalt
 Lehrb..... Lehrbuch
 Leth..... Lethaea
 Lief..... Lieferung
 Lit..... Literary
 Liv..... Livland, Livre

 Mag..... Magazine
 Maj..... Majesté
 Man..... Manual
 Mat..... Matematiska, Matemati-
 sche
 Mater..... Materialien
 Math..... Mathematisch
 Md..... Maryland
 Me..... Maine
 Meddel..... Meddelelser
 Mem..... Memoirs
 Mich..... Michigan
 Micr..... Microscopical
 Midl..... Midland
 Min..... Mineralogy, Mining
 Minn..... Minnesota
 Mitarb..... Mitarbeiter
 Mitt..... Mitteilungen, Mittheil-
 ung
 Mo..... Missouri
 Mon..... Monograph
 Ms., Mss..... Manuscript, Manu-
 scripts
 Mts..... Mountains
 Mus..... Museum

 N..... New
 N. F..... Neue Folge

 N. J..... New Jersey
 N. Mex..... New Mexico
 N. Y..... New York
 Nac..... Nacional
 Narr..... Narrative
 Nat..... National, Naturalist
 Naturf..... Naturforschenden
 Naturg..... Naturgeschichte
 Naturk..... Naturkunde
 Naturw..... Naturwissenschaftliche
 Nebr..... Nebraska
 Neighb..... Neighborhood
 Nev..... Nevada
 No., Nos..... Number, Numbers

 Occ..... Occasional
 Okla..... Oklahoma
 Öster..... Österreich

 P..... Page, Pages
 Pa..... Pennsylvania
 Pal..... Paleontology
 Pan-Am..... Pan-American
 Palaeontogr... Palaeontographical
 Pap..... Paper, Papers
 Pet..... Petrefaktenkunde
 Phil..... Philosophical
 Phys..... Physical, Physikalisch
 Pl., Pls..... Plate, Plates
 Polyt..... Polytechnic
 Pr..... Proceedings
 Pract..... Practical
 Prelim..... Preliminary
 Preuss..... Preussens, Preussischen
 Prof..... Professional
 Prosp..... Prospecting
 Pt..... Part
 Publ..... Publication

 Quart..... Quarterly

 Rec..... Records
 Ref..... Reference
 Reichst..... Reichstalt
 Rept..... Report
 Res..... Research, Resources
 Rev..... Review, Revue
 Rhein..... Rheinische
 Russ..... Russlands

 Sav..... Savants
 Schles..... Schleswig
 Schrift..... Schriften

Sci.....	Science	Umgeb.....	Umgebung
Scotl.....	Scotland	Unit.....	United
Sec.....	Section	Univ.....	University, Universelle
Sen.....	Senate		Universitets
Senck.....	Senckenbergischen	Unt.....	Unteren
Ser.....	Series		
Sess.....	Session	Va.....	Virginia
Sitz.....	Sitzungsberichte	Var.....	Variety
Skript.....	Skrifter	Ver.....	Verein
Soc.....	Society	Verb.....	Verbali, Verbreitung
Spec.....	Special	Verh.....	Verhandlungen
St.....	Saint	Versl.....	Verslagen
Sta.....	Station	Verst.....	Versteinerungen
Summ.....	Summary	Vet.-Akad.....	Vetenskaps-Akademiens
Suppl.....	Supplement	Vid.....	Videnskaps
Syn.....	Synopsis	Vol.....	Volume
Syst.....	Système		
Techn.....	Technical, Technology	W. Va.....	West Virginia
Tenn.....	Tennessee	Wet.....	Wetenschappen
Textb.....	Textbook	Wis.....	Wisconsin
Tr.....	Transactions	Wiss.....	Wissenschaften
Trav.....	Travaux	Wyo.....	Wyoming
U. S.....	United States	Zeitschr.....	Zeitschrift
Uberg.....	Uebergang-Gebirges	Zool.....	Zoology

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TENTATIVE CLASSIFICATION OF AMERICAN DEVONIAN
CEPHALOPOD GENERA

Class CEPHALOPODA

Order NAUTILOIDEA

Suborder ORTHOCHOANITES

Superfamily ORTHOCEROCEA

Family ORTHOCEROTIDAE Teichert and Miller

Diagoceras Flower, *Geisonoceras* Hyatt, *Michelinoceras* Foerste, *Neocycloceras* Flower
and Caster, *Tylorthoceras* Miller

Family CYCLOCERATIDAE Hyatt

Dawsonoceras Hyatt

Family KIONOCERATIDAE Hyatt

Kionoceras Hyatt, *Protokionoceras* Grabau and Shimer, *Spyroceras* Hyatt, *Stria-*
coceras Flower

Superfamily RYTICERACEA

Family HALLOCERATIDAE Hyatt

Halloceras Hyatt, *Zitteloceras* Hyatt

Family RYTICERATIDAE Hyatt

Casteroceras Flower, *Cophinoceras* Hyatt, *Polycronites* Troost, *Ryticeras* Hyatt,
Tetranodoceras Flower

Superfamily RHADINOCERACEA

Family RHADINOCERATIDAE Hyatt

Alpenoceras Foerste, *Baepleuroceras* Williams, *Homaloceras* Whiteaves, *Lyrioceras*
Foerste, *Nephriticeras* Hyatt, *Nephriticerina* Foerste, *Rhadinoceras* Hyatt

Superfamily HERCOCERACEA

Family HERCOCERATIDAE Hyatt

Mitroceras Hyatt, *Naedyceras* Hyatt, *Sphyradoceras* Hyatt

Family TAINOCERATIDAE Hyatt

Diadiploceras Hyatt, *Nassauoceras* Miller

Family CENTROCERATIDAE Hyatt

Centroceras Hyatt, *Tetragonoceras* Whiteaves

Superfamily KONINCKIOCERACEA

Family KONINCKIOCERATIDÆ Hyatt

Carlloceras Flower and Caster

Suborder CYRTOCHOANITES

Superfamily ACTINOCERACEA

Family SACTOCERATIDÆ Troedsson

Ormoceras Stokes

Family PSEUDORTHOCERATIDÆ Flower and Caster

Bradfordoceras Flower and Caster, *Cyrtospyroceras* Flower, *Offleyoceras* Foerste, *Palmeroceras* Flower, *Pseudorthoceras* Girty

Family BICKMORITIDÆ Foerste

Gigantoceras Hyatt, *Tyrrelloceras* Foerste

Family ARMENOCERATIDÆ Troedsson

Armenoceras Foerste

Family EUDOCERATIDÆ Hyatt

Eudoceras Hyatt

Superfamily CYRTOCERACEA

Family JOVELLANIDÆ Hyatt

Tripleuroceras Hyatt

Family POTERICERATIDÆ Foord

Acleistoceras Hyatt, *Aletoceras* Flower, *Amphicyrtoceras* Foerste, *Anglicornus* Flower and Caster, *Blastoceras* Flower and Caster, *Bolloceras* Foerste, *Brevioceras* Flower, *Cyrtogomphus* Flower, *Eleusoceras* Flower, *Endoplanoceras* Flower, *Euryrizoceras* Foerste, *Exocyrtoceras* Flower, *Herkimeroceras* Foerste, *Metaphragmoceras* Flower, *Micronoceras* Flower, *Ovoceras* Flower, *Pachtoceras* Foerste, *Paracleistoceras* Foerste, *Poteriocerina* Foerste, *Turnoceras* Foerste, *Verticoceras* Flower, *Wissenbachia* Foerste

Order AMMONOIDEA

Suborder EXTRASIPHONATA

Superfamily BACTRITACEA

Family BACTRITIDÆ Hyatt

Bactrites Sandberger, *Lobobactrites* Schindewolf

Superfamily AGONIATITACEA

Family AGONIATITIDAE Holzapfel

Subfamily AGONIATITINAE Miller

Agoniatites Meek

Family ANARCESTIDAE Wedekind

Subfamily ANARCESTINAE Steinmann

Werneroceras Wedekind

Superfamily TORNOCERACEA

Family MANTIOCERATIDAE Wedekind

Koenenites Wedekind, *Manticoceras* Hyatt, *Ponticeras* Matern, *Probeloceras* Clarke, *Timanites* Mojsisovics

Family BELOCERATIDAE Smith

Eobeloceras Schindewolf, *Neomanticoceras* Schindewolf

Family TORNOCERATIDAE Wedekind

Tornoceras Hyatt [including the subgenera *Aulatornoceras* Schindewolf, *Parodoceras* Hyatt, and *Tornoceras* Hyatt s. s.]

Superfamily CHEILO CERACEA

Family CHEILO CERATIDAE Frech

Raymondiceras Schindewolf, *Sporadoceras* Hyatt

Superfamily PROLOBITACEA

Family PROLECANITIDAE Hyatt

Subfamily SANDBERGEROCERATINAE Miller

Sandbergeroceras Frech, *Schindewolfoceras* Miller

Suborder INTRASIPHONATA

Superfamily GONIOCLYMENACEA Schindewolf

Family GONIOCLYMENIDAE Hyatt

Acanthoclymenia Hyatt

Superfamily PLATYCLYMENACEA

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CATALOGUE OF GENERA AND SPECIES

ACANTHOCLYMENIA Hyatt (Goniclymenidae)

GENOTYPE: *Clymenia* (*Cyrtoclymenia*) *neapolitana* Clarke

Acanthoclymenia HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 548—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 133—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 482; Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 346-347—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 188-189.

Acanthoclymenia neapolitana (Clarke)

Clymenia (*Cyrtoclymenia*) *Neapolitana* CLARKE, Am. Jour. Sci., 3d ser., vol. 43 (1892) p. 57-63, text figs. 1-12.

Cyrtoclymenia neapolitana CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 54; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 54; N. Y. State Geol., Ann. Rept. 16 (1899) p. 131-134, text figs. 102-106, pl. 8, figs. 19-25 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 586-587—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 371; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 371—WILLARD, Geol. Soc. Am., Bull., vol. 46 (1935) p. 1208.

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Clymenia (*Acanthoclymenia*) *neapolitana* RAYMOND, Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 121—Frech, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 8.

Cashaque shale member of Naples: western New York.

ACLEISTOCERAS Hyatt (Poterioceratidae)

GENOTYPE: *Apioceras olla* Saemann

Acleistoceras HYATT, Boston. Soc. Nat. Hist., Pr., vol. 22 (1883) p. 277; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 530; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 611—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 330, 333, 336-337; Mich. Univ., Mus. Geol., Contr., vol. 2 (1927) p. 196-198—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 61-62; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 20-21.

Acleistoceras? ajax (Hall)

Gomphoceras ajax HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 350, pl. 94, fig. 8—UDDEN, Iowa Geol. Survey, vol. 9 (1899) p. 272, 275, 279—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 590—EKBLAW, Ill. Acad. Sci., Tr., vol. 5 (1912) p. 101, 103, 107—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 14, 18, 74.

Poterioceras ajax CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 317, 321.

Naples: Pen Yan, Yates Co., N. Y.; and possibly the Chemung of New York and the Cedar Valley of eastern Iowa and western Illinois.

Acleistoceras? albani (Clarke)

Cyrtoceras albani CLARKE, N. Y. State Mus., Bull. 107 (1907) p. 175-176, text fig.; N. Y. State Mus., Mem. 9, pt. 1 (1908) p. 34, 35, 105, pl. 13, figs. 6, 7.

St. Alban: Cape Rosier Cove, Gaspé, Quebec.

Acleistoceras? amphora (Whitfield)

Gomphoceras amphora WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 207-208, 242; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 530, pl. 7, fig. 9; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 428, pl. 3, fig. 9—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Potrioceras amphora GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 128, text fig. 1374c—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 360—SHERZER, U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7.

Columbus: central Ohio; and possibly the Dundee of southeastern Michigan.

Acleistoceras? bellatulum (Rowley)

Gomphoceras bellatulum ROWLEY, in GREEN, G. K., Contr. Ind. Pal., pt. 7 (1901) p. 58, pl. 21, figs. 5-8.

Middle Devonian: Charlestown, Ind.

Acleistoceras? breviposticum (Whitfield)

Gomphoceras breviposticum WHITFIELD, Geol. Wis., vol. 4 (1882) p. 339, pl. 26, fig. 15—CLELAND, Jour. Geol., vol. 15 (1907) p. 467, text fig. 13; Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 19, 38, pl. 41, figs. 4, 5.

Milwaukee: Berthelet and Milwaukee, Wis.

Acleistoceras calvini (Cleland)

Gomphoceras calvini CLELAND, Jour. Geol., vol. 15 (1907) p. 465-466, text figs. 4-7; Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 137-138, pl. 34, fig. 1, pl. 35, fig. 1, pl. 36, fig. 1, pl. 37, fig. 1.

Acleistoceras calvini FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 198.

Milwaukee: Berthelet, Wis.

Acleistoceras? cammarus (Hall)

Gomphoceras cammarus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 333-334; N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 7—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 122, fig. 7—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 72.

Acleistoceras cammarus FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197.

Jeffersonville?: Lexington, Ind.

Acleistoceras casei Foerste

Acleistoceras casei FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 199-201, pl. 3, figs. 1A-2B, pl. 5, figs. 1A-1C, 4—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 20, 21, 22.

Alpena: Alpena, Mich.

Acleistoceras? clelandi Miller

Gomphoceras fusiforme WHITFIELD, Geol. of Wis., vol. 4 (1882) p. 338, pl. 26, fig. 16—CLELAND, Jour. Geol., vol. 15 (1907) p. 467–468; Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 19, 139–140, pl. 34, fig. 2, pl. 41, figs. 1–3. [Not *Gomphoceras fusiforme* (Sowerby) d'ORBIGNY, 1849.]

Gomphoceras fusiforme whitfieldi CLELAND, Jour. Geol., vol. 15 (1907) p. 466, 467, text figs. 11, 12. [Obviously a misprint and was intended to read *Gomphoceras fusiforme* WHITFIELD.]

Acleistoceras? clelandi MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 330.

Milwaukee: Milwaukee and Berthelet, Wis.

Acleistoceras crenatum (Hall)

Gomphoceras crenatum HALL, N. Y. Assembly Doc. 105 (1886) pl. (121A) 6, fig. 2—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 33, pl. 121A, fig. 2—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Gomphoceras arcuatum GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376. [Evidently a misprint and was intended to read *Gomphoceras crenatum*.]

Acleistoceras crenatum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 75.

Columbus: central Ohio.

Acleistoceras? cretaceum (Whitfield)

Cyrtoceras cretaceum WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 209–210, 242; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 531–532, pl. 8, figs. 2, 3; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 429–430, pl. 4, figs. 2, 3—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 69, 168—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Orthoceras cretaceum STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 36.

Cyclostomiceras cretaceum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 122, text fig. 1362.

Columbus: central Ohio.

Acleistoceras? dilatatum (Hall)

Oncoceras dilatatum HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 105—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 75–76.

Cherry Valley member of Marcellus: Schoharie, N. Y.

Acleistoceras? dubium (Swartz)

Cyrtoceras? dubium SWARTZ, Md. Geol. Survey, Lower Devonian (1913) p. 130, 488–489, pl. 88, fig. 6.

Coeymans: Devil's Backbone, Md.

Acleistoceras eximium (Hall)

Gomphoceras eximium HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 14 (1861) p. 109; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 44, figs. 1, 2; Pal. N. Y., vol. 5, pt. 2 (1879) p. 329–330, pl. 44, figs. 1, 2—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242—HALL, N. Y. Assembly Doc. 105 (1886) pl. (120) 4, figs. 1, 2, pl. (121) 5, fig. 1—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 120, figs. 1–3, pl. 121, figs. 1, 2—WHITEAVES, Ottawa Nat., vol. 12, no. 6 (1898) p. 127—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 591—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10

(1909) p. 49, 61, 168; Int. Geol. Cong., Twelfth, Guide Book 4 (1913) p. 99—WILLIAMS, Int. Geol. Cong., Twelfth, Guide Book 4 (1913) p. 112—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 70-71.

Poterioceras eximium GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 128, text fig. 1375—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 90, 248; U. S. Geol. Survey, Geol. Atlas of U. S., folio 197 (1915) p. 5.

Acleistoceras eximium FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 288, 290, 337; Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 12, 14, 16, 21.

[Note: The above citations refer to several distinct species, all of which are probably not congeneric.]

Onondaga: Ohio, New York, and Ontario.

***Acleistoceras? facetum* (Rowley)**

Gomphoceras facetum ROWLEY, in Green, G. K., Contr. Ind. Pal., pt. 7 (1901) p. 58-59, pl. 21, figs. 9-12.

Middle Devonian: Charlestown, Ind.

Acleistoceras? fax* (Hall) = *Micronoceras? fax

***Acleistoceras fischeri* (Hall)**

Gomphoceras (Apioceras) fischeri HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 106.

Gomphoceras fischeri HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 45, figs. 5, 6; Pal. N. Y., vol. 5, pt. 2 (1879) p. 336-337, pl. 45, figs. 5, 6—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 124—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Acleistoceras fischeri FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 15, 62-64, pl. 8, figs. 9, 10; *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 16, 17, 22, 71, 72.

Cherry Valley limestone member of Marcellus: Manlius, N. Y.; and possibly the Tully of New York and Middle Devonian erratics of Michigan.

***Acleistoceras? floydense* (Fenton and Fenton)**

Gomphoceras floydense FENTON and FENTON, Univ. Mich., Mus. Geol., Contr., vol. 1 (1924) p. 195, pl. 38, fig. 10.

Hackberry: Rockford, Iowa.

***Acleistoceras? giganteum* (Savage)**

Poterioceras gigantea SAVAGE, Ill. St. Acad. Sci., Tr., vol. 14 (1922) p. 205, pl. 3, fig. 1.

Wapsipinicon: Sears, Ill.

***Acleistoceras? gomphus* (Hall)**

Gomphoceras gomphus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 334-336; N. Y. Assembly Doc. 105 (1886) pl. (123) 8, fig. 1—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 123, fig. 1—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168—GRABAU [Stauffer], Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 72.

Acleistoceras gomphus FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197.

Columbus: Delhi, Ohio.

***Acleistoceras grandtowerense* (Branson and Williams)**

Gomphoceras grandtowerensis BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1924) p. 158, pl. 37, figs. 6, 7.

Acleistoceras grandtowerensis FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 198.

Grand Tower: Little Saline Creek, southeastern Missouri.

Acleistoceras hyatti (Whitfield)

Gomphoceras hyatti WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 206-207, 242; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 529-530, pl. 8, fig. 1, pl. 9, fig. 1; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 427-428, pl. 4, fig. 1, pl. 5, fig. 1—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168—BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1924) p. 158-159, text fig. 10, pl. 38, fig. 1.

Poterioceras hyatti GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 128, text figs. 1374a, 1374b—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 360—SHERZER [Grabau], U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7.

Acleistoceras hyatti FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 198.

Columbus: Columbus, Ohio; and possibly the Dundee of southern Michigan.

Acleistoceras? illaenus (Hall)

Gomphoceras illaenus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 322-323; N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 6—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 122, fig. 6—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 591—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 128.

Acleistoceras? illaenus FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 12, 16, 69.

Schoharie: Schoharie and Albany counties, N. Y.; and possibly the Onondago of Ontario.

Acleistoceras impar (Hall)

Gomphoceras impar HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 332; N. Y. Assembly Doc. 105 (1886) pl. (120) 4, fig. 4, pl. (121A) 6, fig. 1—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 120, fig. 4, pl. 121A, fig. 1—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168—GRABAU [Stauffer] Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376—BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1924) p. 159-160, pl. 37, fig. 1—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 71-72.

Gomphoceras (Poterioceras) impar CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 591.

Acleistoceras impar FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 71-72.

Columbus: Columbus, Ohio; and possibly the Grand Tower of southeastern Missouri.

Acleistoceras jonesi Flower

Acleistoceras jonesi FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 21-22, pl. 3, figs. 8, 9.

Cherry Valley limestone member of Marcellus: Stockbridge Falls, N. Y.

Acleistoceras? louisense Foerste

Acleistoceras? louisense FOERSTE, Ontario Dept. Mines, Ann. Rept. 37, pt. 6, (1929) p. 73-74, pl. 1, figs. 4A, 4B.

Abitibi River: Moose River, on Louise Island, Ontario.

Acleistoceras mitra (Hall)

Gomphoceras mitra HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 330-331; N. Y. Assembly Doc. 105 (1886) pl. (119) 3, fig. 1, pl. (121) 5, fig. 3—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 119, fig. 1, pl. 121, fig. 3—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 592—STAUFFER, Ohio Geol. Survey, 4th ser.,

Bull. 10 (1909) p. 168—GRABAU [Stauffer] Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 71.

Acleistoceras mitra FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 288, 290, 337; Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 197—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 71.

Jeffersonville: Lexington, Ind.; and possibly the Columbus of central Ohio.

***Acleistoceras nummulatum* Foerste**

Acleistoceras nummulatum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 201–203, pl. 4, figs. 1–3, pl. 5, fig. 3.

Alpena: Alpena, Mich.

***Acleistoceras olla* (Saemann)**

Apioceras olla SAEMANN, *Palaeontographica*, Bd. 3 (1854) p. 163, pl. 19, figs. 1a–1c.
Acleistoceras olla HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 277—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 336–337, pl. 44, figs. 6a–6c; Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 196–198—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 21, 22, 75.

Columbus: Columbus, Ohio.

***Acleistoceras?* omicron (Winchell)**

Gomphoceras omicron WINCHELL, The Grand Traverse region, a report on the geological and industrial resources of the counties of Antrim, Grand Traverse, Benzie, and Leelanaw in the lower peninsula of Michigan (1866) p. 86, 97.

Traverse: Benzie or Leelanaw Co., Mich.

***Acleistoceras plenum* (Hall)**

Gomphoceras plenum HALL, N. Y. Assembly Doc. 105 (1886) pl. (121A) 6, figs. 3, 4—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 33–34, pl. 121A, figs. 3, 4—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 91, 168—GRABAU [Stauffer], Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376—BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1924) p. 160–161, pl. 38, fig. 3.
Acleistoceras plenum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 336; Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 196–197—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 75.

[Note: This form may be conspecific with *A. olla* (Saemann).]

Columbus: Columbus and Radnor, Ohio; and possibly the Grand Tower of southeastern Missouri.

Acleistoceras poculum* (Hall) = *Micronoceras poculum

Acleistoceras raphanus* (Hall) = *Micronoceras raphanus

***Acleistoceras?* *sacculum* (Meek and Worthen)**

Gomphoceras sacculum MEEK and WORTHEN, Philadelphia Acad. Nat. Sci., Pr. (1866) p. 258.

Cyrtoceras sacculum MEEK and WORTHEN, Ill. Geol. Survey, vol. 3 (1868) p. 445–446, pl. 12, figs. 3a–3c.

Delaware?: White Sulphur Springs, Ohio.

***Acleistoceras schoharie* Flower**

Acleistoceras schoharie FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 23–24, pl. 4, figs. 16, 17.

Schoharie: Schoharie, N. Y.

Acleistoceras? sciotense Whitfield

Gomphoceras sciotense WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 208-209, 242; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 531, pl. 8, fig. 4, pl. 9, fig. 2, pl. 10, figs. 6, 7; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 428-429, pl. 4, fig. 4, pl. 5, fig. 2, pl. 6, figs. 6, 7—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Columbus: central Ohio.

Acleistoceras? striatum (Rowley)

Gomphoceras striatum ROWLEY, in Greene, G. K., Contr. Ind. Pal., pt. 7 (1901) p. 58, pl. 21, figs. 1-4.

Middle Devonian: Charlestown, Ind.

Acleistoceras? suboviforme (Walcott)

Gomphoceras suboviforme WALCOTT, U. S. Geol. Survey, Mon. 8 (1884) p. 202-203, pl. 17, figs. 8, 8a.

Nevada: Eureka district, Nevada.

Acleistoceras? varum (Hall)

Orthoceras varum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 259-260, pl. 79, figs. 2, 4, pl. 112, figs. 5, 6—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 645.

Orthoceras rarum GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327. [Obviously a misprint and was intended to read *Orthoceras varum*.]

Schoharie: Schoharie and Albany counties, N. Y.

Acleistoceras? walshii (Meek and Worthen)

Phragmoceras walshii MEEK and WORTHEN, Philadelphia Acad. Nat. Sci., Pr. (1866) p. 257; Ill. Geol. Survey, vol. 6 (1875) p. 511-512, pl. 28, figs. 2a, 2b—BARRIS, Davenport Acad. Nat. Sci., Pr., vol. 2 (1880) p. 266, 267—NORTON, Iowa Geol. Survey, vol. 9 (1899) p. 451; Iowa Geol. Survey, vol. 27 (1920) p. 541.

Davenport: Scott Co., Iowa, and near Rock Island, Ill.

Acleistoceras wellsii Flower

Acleistoceras wellsii FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 22-23, pl. 4, figs. 22-24.

Tully: near Tully and Skaneateles Lake, N. Y.

Acleistoceras whitfieldi (Cleland)

Gomphoceras whitfieldi CLELAND, Jour. Geol., vol. 15 (1907) p. 464-465, text figs. 9, 10; Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 137, pls. 39, 40.

Acleistoceras whitfieldi FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 198.

Milwaukee: Berthelet, Wis.

Acleistoceras? wisconsinense (Cleland)

Gomphoceras wisconsinense CLELAND, Jour. Geol., vol. 15 (1907) p. 461-464, text figs. 1-3; Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 19, 135-136, pls. 29-31.

Milwaukee: Berthelet, Wis.

Actinoceras backi Foord [part] = **Armenoceras rotulatum**

Actinoceras hindii Whiteaves = **Bradfordoceras hindii**

AGONIATITES Meek (Agoniatitidae)

GENOTYPE: *Goniatites vanuxemi* Hall

Agoniatites MEEK, U. S. Geol. Exploration Fortieth Parallel, vol. 4 (1877) p. 99—HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 310–311—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 417—BEYRICH, Deutsch geol. Ges., Zeitschr., Jahrg. 1884 (1884) p. 205—HOLZAPFEL, K. Preuss. geol. Landes., Abh., N. F., Heft 16 (1895) p. 51–55—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 49, 284—HAUG, Soc. géol. France, Mém., Pal., tome 7, no. 18 (1898) p. 37—CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 122, 127, 168–169, text fig. 6—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 549—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 32—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 630—Wedekind, Palaeontographica, Bd. 62 (1918) p. 107, 110–113, 164—SHANNON, Devon Assoc., Tr., vol. 53 (1921) p. 249—FERRONNIÈRE, Soc. sci. nat. Nantes, Bull., sér. 4, tome 1 (1921) p. 31–34—BROILI, Zittel-Broili, Grundz. Pal., Abt. 1, ed. 6 (1924) p. 548—SCHLÜTER, Preuss. geol. Landes., Jahrb., Bd. 48 (1928) p. 207–210, text fig. 12—SCHINDEWOLF, Preuss. geol. Landes., Abh., N. F., Heft 148 (1933) p. 76—MILLER, Geol. Soc. Am., Spec. Pap. 14, p. 43–44.

Aphyllites [part] MOJSISOVICS, Kais.-K. geol. Reichsanstalt, Abh., Bd. 10 (1882) p. 181—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 549—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 44—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 122—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 13. [The genotype of *Aphyllites* is *Goniatites ambigena* BARRANDE, and *Aphyllites* is to be suppressed as a synonym of *Gyroceratites*.]

Agoniatites costulatus (d'Archiac and de Verneuil) [part] = **Agoniatites vanuxemi**

Agoniatites? desideratus (Walcott)

Goniatites desideratus WALCOTT, U. S. Geol. Survey, Mon. 8 (1884) p. 203–204; pl. 17, fig. 10.

Agoniatites? desideratus MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 8 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 44–45, pl. 4, fig. 10.

Lower (Onondaga) portion of Nevada: Eureka district, Nevada.

Agoniatites discoideus (Hall) = **Tornoceras (Parodoceras) discoideum**

Agoniatites expansus (Vanuxem) = **Agoniatites vanuxemi**

Agoniatites expansus nodiferus (Hall) = **Agoniatites nodiferus**

Agoniatites floweri Miller

Agoniatites floweri FLOWER, Bull. Am. Pal., vol. 22 (1936) p. 280, 281, 346 [nomen nudum]—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 45–46, pl. 11, figs. 1, 2.

Cherry Valley member of Marcellus: Stockbridge Falls and Manlius, N. Y.

Agoniatites inconstans expansus (Vanuxem) [part] = **Agoniatites vanuxemi**

Agoniatites inconstans nodiger (Hall) = **Agoniatites nodiferus**

Agoniatites intermedius Flower

Agoniatites intermedius FLOWER, Bull. Am. Pal., vol. 22 (1936) p. 346–348, pl. 23, fig. 11—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 48.

Cherry Valley member of Marcellus: Union Springs, N. Y.

Agoniatites nevadensis Miller

Agoniatites nevadensis MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 46–47, text figs. 4, 5, pl. 6, fig. 1.

Lower portion of Nevada: Roberts Mountains quadrangle, Nevada.

Agoniatites nodiferus (Hall)

Goniatites Vanuxemi nodiferus HALL, N. Y. State Geol., Ann. Rept. 5 (1886) pl. (127) 12, fig. 7—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39, pl. 127, fig. 7.

(?) *Agoniatites inconstans nodiger* HOLZAPFEL, K. preuss. geol. Landes., Abh., N. F., Heft 16 (1895) p. 61–62.

Agoniatites expansus nodiferus CLARKE, N. Y. State Geol., Ann. Rept. 16 (1898) p. 55 [also issued as N. Y. State Mus., Ann. Rept. 50]; N. Y. State Mus., Bull. 49 (1901) p. 122—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 574.

Aphyllites vanuxemi nodifer FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 14.

Agoniatites nodiferus FLOWER, Bull. Am. Pal., vol. 22 (1936) p. 275, 346—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 9 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 47–49, pl. 10, fig. 1.

Cherry Valley member of Marcellus: near Cherry Valley, N. Y.; and possibly the Middle Devonian of Germany.

Agoniatites obliquus (Whidborne) [part] = **Agoniatites vanuxemi**

Agoniatites? punctatus (Conrad)

Goniatites punctatus CONRAD, N. Y. Geol. Survey, Ann. Rept. 2 (1838) p. 111, 117—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 431.

Agoniatites? punctatus MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 10 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938), p. 49.

Hamilton: near Sherburn, N. Y.

Agoniatites unilobatus (Hall)

Goniatites unilobatus HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 2, 4; N. Y. State Mus., Ann. Rept. 27 (1875) p. 133, 136; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda, (1876) pl. 71, figs. 15, 16, pl. 74, fig. 5; Pal. N. Y., vol. 5, pt. 2 (1879) p. 438–440, pl. 71 figs. 15, 16, pl. 74, fig. 5.

Agoniatites unilobatus CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 575—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 11 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 49–50, pl. 6, figs. 2–4.

Hamilton: central New York.

Agoniatites vanuxemi (Hall)

Goniatites expansus VANUXEM, Geol. of N. Y., pt. III, Comprising the survey of the third geological district (1842) p. 146, 147, text fig. 1—OWEN, Am. Jour. Sci. and Arts, 2d ser., vol. 3 (1847) p. 59, text fig. 1—HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 96–97, text figs. 1, 2—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 11A, figs. 3, 4—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 64A, figs. 3, 4, pl. 66, figs. 1, 2, pl. 67, fig. 1, pl. 68, fig. 1, pl. 69, figs. 3–6—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 256, text figs. [Not *Ammonites expansus* von Buch, 1832.]

Ammonites subnautilinus [part] GIEBEL, Fauna der Vorwelt mit steter Berücksichtigung der lebenden Thiere, Bd. 3, Mollusken, Abt. 1, Cephalopoden (1852) p. 479–480.

Goniatites subnautilinus [part] SANDBERGER and SANDBERGER, Die Versteinerungen des rheinischen Schichtensystems in Nassau (1852) p. 114–117.

Goniatites (Agoniatites) expansus MEEK, U. S. Geol. Exploration Fortieth Parallel, vol. 4 (1877) p. 99—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Goniatites vexus [part] KAYSER, Abh. geol. Spezialkarte preussen und thüringischen Staaten, Bd. 2, Heft 4 (1878) p. 38.

Goniatites vanuxemi HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 434–438, pl. 66, figs. 1, 2, pl. 67, fig. 1, pl. 68, fig. 1, pl. 69, figs. 3–6, pl. 109, figs. 7, 8; N. Y. State Geol., Ann. Rept. 5 (1886) pl. (127) 12, figs. 3–6—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39, pl. 127, figs. 3–6—MILLER, North American geology and palaeontology for the

use of amateurs, students, and scientists (1889) p. 440—WHITFIELD and HOVEY, *Am. Mus. Nat. Hist., Bull.*, vol. 11 (1900) p. 332-333—HOUGHTON, *Buffalo Soc. Nat. Sci., Bull.*, vol. 11, no. 1 (1914) p. 91—SMITH, *N. Y. State Mus., Bull.* 171 (1914) p. 63.

Agoniatites vanuxemi HYATT, *Boston Soc. Nat. Hist., Pr.*, vol. 22 (1883) p. 310-311—ZITTEL, *Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2* (1884) p. 417—FOORD and CRICK, *Cat. foss. Cephalopoda in British Mus.*, pt. 3 (1897) p. 57-58, text fig. 22—FLOWER, *Bull. Am. Pal.*, vol. 22 (1936) p. 276, 283, 285, 346—MILLER, *Type invertebrate fossils of North America (Devonian), Ammonoidea 12* (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 50-55, text fig. 6, pl. 6, figs. 5-7, pl. 7, figs. 1, 2, pl. 8, fig. 1, pl. 9, fig. 1, pl. 10, figs. 2-5.

Agoniatites inconstans expansus [part] HOLZAPFEL, *K. preuss. geol. Landes., Abh., N. F., Heft.* 16 (1895) p. 59-61.

Agoniatites expansus CLARKE, *N. Y. State Geol., Ann. Rept.* 16 (1899) p. 122, 168-169, text fig. 6 [also issued as *N. Y. State Mus., Ann. Rept.* 50]; *N. Y. State Mus., Bull.* 49 (1901) p. 117, 120, 121, 122, 123, 124, 125—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 573-574—SMITH, *U. S. Geol. Survey, Mon.* 42 (1903) p. 32—GRABAU, *N. Y. State Mus., Bull.* 92 (1906) p. 212, text fig. 157—GRABAU and SHIMER, *North American index fossils, Invertebrates, vol. 2* (1910) p. 135, text fig. 1388—KINDLE, *U. S. Geol. Survey, Bull.* 508 (1912) p. 37, 107, pl. 9, fig. 6; *Md. Geol. Survey, Middle and Upper Devonian* (1913) p. 53, 55, 57—SWARTZ, *Md. Geol. Survey, Middle and Upper Devonian* (1913) p. 91—SWARTZ and PROSSER, *Md. Geol. Survey, Middle and Upper Devonian* (1913) p. 108—PROSSER and KINDLE, *Md. Geol. Survey, Middle and Upper Devonian* (1913) p. 321-323, pl. 42, fig. 6—HOPKINS, *N. Y. State Mus., Bull.* 171 (1914) p. 25—WEDEKIND, *Palaeontographica, Bd.* 62 (1918) p. 110—GOLDRING, *N. Y. State Mus., Handb.* 10 (1931) p. 391—SCHINDEWOLF [part], *Preuss. geol. Landes., Abh., N. F., Heft.* 148 (1933) p. 83—WILLARD, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 210—FLOWER, *Bull. Am. Pal.*, vol. 22 (1936) p. 280, 346.

Aphyllites Vanuxemi GÜRICH, *Leitfossilien des Devons, Leitfossilien, Lief.* 2 (1909) p. 123, pl. 39, figs. 1a, 1b—FRECH, *Fossilium Catalogus, I, Animalia, pars 1* (1913) p. 14.

Agoniatites costulatus [part] SCHLÜTER, *Preuss. geol. Landes., Jahrb.*, Bd. 48 (1928) p. 210.

Agoniatites obliquus [part] SCHLÜTER, *Preuss. geol. Landes., Jahrb.*, Bd. 48 (1928) p. 212.

Cherry Valley member of *Marcellus*: New York; and possibly the Onondaga, Hamilton, and Canadaway of New York, the Onondaga of Maryland and Pennsylvania, and the Middle Devonian of Germany.

ALTOCERAS Flower (Poterioceratidae)

GENOTYPE: *Aletoceras gracile* Flower

Aletoceras FLOWER *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 35-36.

Aletoceras amphoroides Flower

Aletoceras amphoroides FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 37, pl. 3, figs. 3, 4.

West Brook member of Tully: near Georgetown, N. Y.

Aletoceras gracile Flower

Aletoceras gracile FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 36-37, pl. 4, fig. 1.

Tully: Kingsley Hill, Cortland Co., N. Y.

ALPENOCERAS Foerste (Rhadinoceratidae)

GENOTYPE: *Alpenoceras ulrichi* Foerste

Alpenoceras FOERSTE, *Univ. Mich., Mus. Geol., Contr.*, vol. 2 (1927) p. 205-206—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 11, 13, 54.

Alpenoceras? clavatum (Hall) = **Verticoceras? clavatum**

Alpenoceras conradi (Hall) = **Verticoceras conradi**

Alpenoceras ulrichi Foerste

Alpenoceras ulrichi FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 206–208, pl. 1, figs. 2A, 2B, pl. 5, fig. 2—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 11.

Alpena: Alpena, Mich.

Ammonites subnautilus Schlotheim [part] = **Agoniatites vanuxemi**

AMPHICYRTOCERAS Foerste (Poterioceratidae)

GENOTYPE: *Cyrtoceras orcas* Hall

Amphicyrtoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 20 (1924) p. 255; Denison Univ. Bull., Jour. Sci. Lab., vol. 25 (1930) p. 67–68—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 7, 35, 44.

Amphicyrtoceras sauridens (Clarke and Ruedemann)

Poterioceras sauridens CLARKE and RUEDEMANN, N. Y. State Mus., Mem. 5 (1903) p. 93–97, pl. 14, figs. 1–19 [also issued as N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8, 1905]—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 127, text fig. 1373—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2 (1910) p. 49, 198–199, 213, pl. 29, fig. 4—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 1025—STAUFFER, Canada Geol. Survey, Mem. 34 (1915) p. 284.

Amphicyrtoceras? sauridens FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 29 (1934) p. 161.

[Note: The Devonian forms that have been referred to this species probably are not at all closely related to the syntypes.]

Guelph [Silurian]: New York; and possibly the Detroit River? of Michigan and Ontario.

ANABELO CERAS Clarke =? **NEOMANTICOCERAS**

Anabeloceras pseustes Clarke =? **Neomanticoceras naplesense**

Anarcestes plebeiformis (Hall) = **Werneroceras plebeiforme**

ANGLICORNUS Flower and Caster (Poterioceratidae)

GENOTYPE: *Anglicornus anneliesae* Flower and Caster

Anglicornus FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 52–53—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 12, 13, 14, 18, 33–34, 75.

Anglicornus anneliesae Flower and Caster

Anglicornus anneliesae FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 53–54, pl. 6, figs. 14, 15—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 18, 33.

Lewis Run sandstone member of Venango, and Pope Hollow conglomerate member of Salamanca; McKean and Warren counties, Pa.

Anglicornus goldringae Flower

Anglicornus goldringae FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 34–35, pl. 4, fig. 25.

Canadaway: Belmont, N. Y.

Anglicornus nasutum (Hall)

Gomphoceras nasutum HALL, N. Y. Assembly Doc. 105 (1886) pl. (120) 4, figs. 5–7—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 34–35, pl. 120, figs. 5–7—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 72.

Gomphoceras (Poterioceras) nasutum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 592.

Anglicornus nasutum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 54-55—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 18, 33, 34.

Poterioceras nasutum CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 324.

Lower Venango: Belmont and Belvidere, N. Y.

Anglicornus? tumidum (Hall)

Gomphoceras tumidum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 351, pl. 93, fig. 6, pl. 95, figs. 2-5, 7—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 594—WILLIAMS, TARR, and KINDLE, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 8—LUTHER, N. Y. State Mus., Bull. 137 (1910) p. 31—OLSSON, Am. Jour. Sci., 4th ser., vol. 33 (1912) p. 446—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 33, 74-75.

Poterioceras tumidum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 130—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 317—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 11.

[Note: The above citations refer to several distinct species, all of which are probably not congeneric.]

Naples and Chemung: New York.

APHYLLITES Mojsisovics = *GYROCERATITES* and *AGONIATITES*

Aphyllites vanuxemi (Hall) = *Agoniatites vanuxemi*

Aphyllites vanuxemi nodifer (Hall) = *Agoniatites nodiferus*

Apioceras olla Saemann = *Acleistoceras olla*

Aploceras (Cyrtoeras) liratum Hall = *Lyrioceras dubium*

ARMENOCERAS Foerste (Armenoceratidae)

GENOTYPE: *Actinoceras hearsti* Parks

Armenoceras FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1924) p. 32; Can. Geol. Survey, Mem. 145, appd. (1925) p. 73—TROEDSSON, Jubilaumskepeditionen Nord om Groenland 1920-1923, Nr. 1 (Sæertryk af Meddelelser om Groenland, 71) [also issued as Comm. pal. no. 25 of the Mus. de min. et de géol. de l'Univ. Copenhagen] (1926) p. 60-61—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) p. 63; Can. Geol. Survey, Mem. 154 (1927) p. 293-298; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 202—FOERSTE and TEICHERT, Denison Univ. Bull., Jour. Sci. Lab., vol. 25 (1930) p. 269-271.

Armenoceras coppingeri Foerste

Orthoceras imbricatum [part] ETHERIDGE, Geol. Soc. London, Quart. Jour., vol. 34 (1878) p. 607 [part under D 12]—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 908. [Not *Orthoceratites imbricatum* Hisinger, 1831.]

Actinoceras sp. FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 184.

Armenoceras coopingeri FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 85-88, pl. 12, fig. 1, pl. 24, figs. 4A, 4B; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Dobbin Bay, Ellesmere Island.

Armenoceras donetti Foerste

Endoceras? ommaneyi [part] FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 155-156—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 1 (1915) p. 483.

Armenoceras donetti FOERSTE in FOERSTE and SAVAGE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) pl. 3, fig. 6—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 82-85, pl. 24, figs. 3A, 3B; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Cornwallis Island.

Armenoceras ommaneyi (Salter)

Orthoceras ommaneyi SALTER, Appd. to Sutherland's Journal of a voyage in Baffin's Bay and Barrow Straits . . . (1852) p. 222, pl. 5, figs. 16, 17—SALTER, Geol. Soc. London, Quart. Jour., vol. 9 (1853) p. 314—HAUGHTON, Royal Dublin Soc., Jour., vol. 1 (1857) p. 249, pl. 11, fig. 5; in M'CLINTOCK'S Discovery of the fate of Franklin and his companions, appd. 4 (1859) p. 381.

Endoceras? ommaneyi [part] FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 155-156—BASSLER, U. S. Nat. Mus., Bull., vol. 1 (1915) p. 483.

Armenoceras ommaneyi FOERSTE, in FOERSTE and SAVAGE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) pl. 4, fig. 6—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 77-82, 84-85, pl. 13, figs. 3-5B, pl. 24, figs. 2A-2C; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian: Assistance Bay, Cornwallis Island.

Armenoceras cf. A. rotulatum (Billings)

Orthoceras nummularium ETHERIDGE, Geol. Soc. London, Quart. Jour., vol. 34 (1878) p. 608. [Not *Orthoceras nummularius* Sowerby, 1839.]

Actinoceras backi [part] FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1, (1888) p. 183—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 1 (1915) p. 10.

Actinoceras sp. FOERSTE and SAVAGE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) pl. 16, figs. 4A, 4B.

Armenoceras rotulatum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 88-91, pl. 25, fig. 5; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Bessels Bay, Greenland.

Armenoceras cf. A. sphaeroidale (Stokes)

Armenoceras sphaeroidale FOERSTE, in FOERSTE and SAVAGE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) pl. 3, fig. 5—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 76-77, pl. 28, figs. 1A, 1B; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Arctic America, probably from Dobbin Bay, Ellesmere Island.

AULATORNOCERAS Schindewolf = **TORNOCERAS** (**AULATORNOCERAS**)**BACTRITES** Sandberger (Bactritidae)

GENOTYPE: *Bactrites subconicus* Sandberger

————— SANDBERGER, Neues Jahrb. f. Min., Geog., Geol. und Pet. (Leonhard und Bronn), Jahrg. 1841 (1841) p. 240-241. [Genus described but not named.]

Bactrites SANDBERGER, Amtlicher Bericht über die zwanzigste Versamml. der Ges. deutsch. Naturf. und Aerzte zu Mainz (1843) p. 157—RÖMER, Palaeontographica, Bd. 3 (1850) p. 18—GIEBEL, Fauna der Vorwelt, Bd. 3 (1851) p. 278—SANDBERGER and SANDBERGER, Die Versteinerungen des rheinischen Schichtensystems in Nassau (1852) p. 124-129—ROEMER, Lethaea Geognostica (1856) p. 477—Eichwald, Lethaea Rossica, tome 1 (1860) p. 1261—BARRANDE, Système Silurien du centre de la Bohême, vol. 2, pt. 1 (1867) pp. 44-50, pt. 3 (1874) p. 803-804, pt. 5 (1877) p. 1343-1344—Hall, Pal. N. Y., vol. 5, pt. 2 (1879) p. 315-316—HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 303-304—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 370, text fig. 509—BRANCO, Deutsch. geol. Ges., Zeitschr., Bd. 37 (1885) p. 8—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 432—CLARKE, Am. Geol., vol. 14 (1894) p. 137-143, pl. 2—KOKEN, Die Leitfossilien (1896) p. 58—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1879) p. 1-8—CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 122-123, 129-130—HOLZAPFEL, Mém. Comité géol., tome 12, no. 3 (1899) p. 6-7—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 295—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 549, text figs. 1120A, 1120B—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 31—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 121—GIRTY, U. S. Geol. Survey, Bull. 377 (1909) p. 50-54—GRABAU

and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 134—GIRTY, U. S. Geol. Survey, Bull. 439 (1911) p. 96-97—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 11-12—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 629, text figs. 1169A, 1169B—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 549, text figs. 1144a, 1144b—MILLER, Jour. Pal., vol. 4 (1930) p. 389-390—SCHINDEWOLF, Pal. Zeitschr., Bd. 14 (1932) p. 174-175; Preuss. geol. Landes., Abh., N. F., Heft 148 (1933) p. 72—SPATH, Biol. Rev., vol. 8 (1933) p. 420, 422, 445-450, 459—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 28-30.

Stenoceras d'ORBIGNY, Cours élémentaire de paléontologie et de géologie stratigraphiques, tome 1 (1849) p. 287—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 29.

Bactrites? aciculum (Hall)

Orthoceras aciculum HALL, Geol. N. Y., pt. IV, Comprising the survey of the fourth geological district (1843) p. 244, text fig. 106 (4)—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 2 (1889) p. 540, text fig.

(?) *Ceratiocaris longicaudus* [part] HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 16 (1863) p. 73, pl. 1, figs. 4-6 [not 7].

(?) *Coleolus aciculum* HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 187-188, pl. 32A, figs. 11-16—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 136-137, text fig.—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 389, text fig. 642.

(?) *Bactrites aciculum* CLARKE, Am. Geol., vol. 14 (1894) p. 40, pl. 2, figs. 6, 9; N. Y. State Geol., Ann. Rept. 16 (1899) p. 128-129, pl. 9, figs. 17-22 [also issued as N. Y. State Mus., Ann. Rept. 50]—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 295-296, text fig. 230—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 576-577—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 58, 59, 60, 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 366, 373; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 366, 373—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 26, 28, 30—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135, text fig. 1387b—LUTHER, N. Y. State Mus., Bull. 137 (1910) p. 26, 28, 29, 31; N. Y. State Mus., Bull. 152 (1911) p. 16, 18—KINDLE, Jour. Geol., vol. 19 (1911) p. 348—SWARTZ, U. S. Geol. Survey, Geol. atlas of U. S., folio 179 (1912) p. 11, 12—KINDLE, U. S. Geol. Survey, Bull. 508 (1912) p. 27, 32, 34, 37, 39, 44, 47, 104, pl. 9, fig. 3—FRECH [part?], Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 12—PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 55—SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 90, 91, 412, 413, 444—SWARTZ and PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 108—KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 320-321, pl. 38, fig. 9, pl. 42, fig. 5—PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 357, 363, 368, 370, 371, 372—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 692-693, pl. 71, fig. 11—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 23, 25, 27, 28—GRABAU, Geol. Soc. Am. Bull., vol. 28 (1917) p. 952—BUTTS, Am. Jour. Sci., 4th ser., vol. 46 (1918) p. 531—KINDLE, Canada Geol. Survey, Mus. Bull. 29 (1919) p. 3, 7, pl. 1, fig. 10—REGER, W. Va. Geol. Survey, County Repts., Mineral and Grant counties (1924) p. 741, 749—TILTON, Am. Jour. Sci., 5th ser., vol. 17 (1929) p. 350—KINDLE, Am. Jour. Sci., 5th ser., vol. 18 (1929) p. 188—CRONEIS and HOFFMAN, Science, new ser., vol. 73 (1931) p. 135—WILLARD, Geol. Soc. Am., Bull., vol. 46 (1935) p. 223—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312, 318, 321—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 1 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 30-32.

(?) *Bactrites (Coleolus) aciculum* WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 6.

Cashaqua shale member of Naples: Cashaqua Creek, N. Y.; and possibly various horizons in the Middle and/or Upper Devonian of New York, Pennsylvania, Maryland, Virginia, West Virginia, Missouri, Alberta, and Mackenzie River valley.

Bactrites (Coleolus) aciculum (Hall) =? Bactrites? aciculum

Bactrites arkonensis Whiteaves

Bactrites obliqueseptatus arkonensis WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 407-408, pl. 48, figs. 15-16a—WILLIAMS, Int. Geol. Cong.,

Twelfth, Guide Book 4 (1913) p. 102, 110; Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 284.

Bactrites arkonensis GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 161, 168, 172, 226, 236; Jour. Geol., vol. 24 (1916) p. 478, 483—GRABAU, Jour. Geol., vol. 25 (1917) p. 342—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 2 (1936); Geol. Soc. Am., Spec. Paper 14 (1938) p. 32-33, pl. 2, figs. 1, 2, pl. 3, figs. 13-15.

Arkona shale: southern Ontario; and possibly the Widder beds of southern Ontario and the Plumb Creek shale of northern Ohio.

Bactrites clavus Hall = **Lobobactrites clavus**

Bactrites gracilior Clarke

Bactrites sp. CLARKE, Neues Jahrb. f. Min., Geol. und Pal., Jahrg. 1891 (1891) Bd. 1, p. 166; Am. Geol., vol. 8 (1891) p. 95.

Bactrites cf. *B. gracilis* CLARKE, Am. Geol., vol. 14 (1894) p. 37-43, pl. 2, figs. 2-5; N. Y. State Geol., Ann. Rept. 15 (1897) p. 54, 80; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 54, 80.

Bactrites gracilior CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 124-128, text fig. 101, pl. 9, figs. 1-16 [also issued as N. Y. State Mus., Ann. Rept. 50]—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 295, text fig. 229—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 578-579—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 366, 371; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 366, 371—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135, text fig. 1387a—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 12—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—BURGESS, Mus. Comp. Zool., Bull., vol. 72, no. 5 (1931) p. 200—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312, 318, 321—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 3 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 33-35, pl. 4, figs. 1-9.

Genesee and Naples: New York; and possibly the Chemung of New York and the Kiln of Alberta.

Bactrites gracilis Sandberger [part] = **Bactrites gracilior**

Bactrites nitidus Raymond

Bactrites sp. RAYMOND [Holzapfel], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 117, 120; Int. Zool. Cong., Seventh, Pr., *advance print* (1910) p. 2; Int. Zool. Cong., Seventh, Pr. (1912) p. 742.

Bactrites nitidus RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 152, pl. 7, figs. 9-12—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 333—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 4 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 35-36, pl. 2, figs. 15-18.

Three Forks shale: Three Forks, Montana.

Bactrites obliqueseptatus arkonensis Whiteaves = **Bactrites arkonensis**

Bactrites parvus Loomis

Bactrites parvus LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 916, 919, pl. 4, figs. 12, 13 [not pl. 5, figs. 4, 5 as stated by Loomis]—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 57—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 5 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 36-37, pl. 4, figs. 10, 11.

Uppermost Hamilton: New York.

Bactrites pygmaeus Loomis

Bactrites pygmaeus LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 915, 919, pl. 5, figs. 4, 5 [not pl. 4, figs. 12, 13 as stated by Loomis]—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 57—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935)

p. 312—MILLER, Type invertebrate fossils of North America (Devonian), *Ammonoidea* 6 (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 37, pl. 3, fig. 22.

Uppermost Hamilton: Canandaigua Lake, N. Y.

Bactrites cf. *B. subflexuosus* (Keyserling)

Bactrites cf. *B. subflexuosus* CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 361, 366, 368, 381; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 361, 366, 368, 381—MILLER, *Geol. Soc. Am., Spec. Paper* 14 (1938) p. 37-38.

Bactrites subflexuosus? CHADWICK, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 320.

Angola shale member of Chemung: western New York.

***Bactrites warthini* Miller**

Bactrites warthini MILLER, *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 38-39, pl. 2, figs. 3-10, pl. 35, fig. 9.

Basal Antrim: near Alpena, Mich.

***BAEPLUROCERAS* Williams (Rhadinoceratidae)**

GENOTYPE: *Baepleuroceras incipiens* Williams

Baepleuroceras WILLIAMS, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 851—MILLER, *Geol. Soc. Am., Bull.*, vol. 48 (1937) p. 1254-1255.

***Baepleuroceras incipiens* Williams**

Baepleuroceras incipiens WILLIAMS, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 851, 852, pl. 60, figs. 24, 27—COOPER and WILLIAMS, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 859—WILLARD, *Geol. Soc. Am., Bull.*, vol. 48 (1937) p. 1248—MILLER, *Geol. Soc. Am., Bull.*, vol. 48 (1937) p. 1254-1255, pl. 2, figs. 12-14, 19.

West Brook member of Tully: New York and Pennsylvania.

Barrandeoceras oriens* (Hall) = *Nephriticeras oriens

Beloceras iynx* Clarke = *Eobeloceras iynx

***BLASTOCERAS* Flower and Caster (Poterioceratidae)**

GENOTYPE: *Balstoceras cylindrostomum* Flower and Caster

Blastoceras FLOWER and CASTER, *Bull. Am. Pal.*, vol. 22, no. 75 (1935) p. 50—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 12, 13, 18, 35.

***Blastoceras cylindrostomum* Flower and Caster**

Blastoceras cylindrostomum FLOWER and CASTER, *Bull. Am. Pal.*, vol. 22, no. 75 (1935) p. 51-52, pl. 6, figs. 10-13—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 18.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

***BOLLOCERAS* Foerste (Poterioceratidae)**

GENOTYPE: *Phragmoceras rex* Barrande

Bolloceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 351-352, pl. 48, figs. 3A-3C—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 63.

***Bolloceras hartti* Flower**

Bolloceras hartti FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 63-64, pl. 3, fig. 13.

Ithaca: Ithaca, N. Y.

BRADFORDOCERAS Flower and Caster (Pseudorthoceratidae)GENOTYPE: *Bradfordoceras transversum* Flower and Caster*Bradfordoceras* FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 32-34.**Bradfordoceras cochleatum** (Hall) = **Bradfordoceras warrenense****Bradfordoceras consortale** (Hall)

Orthoceras consortale HALL, N. Y. Assembly Doc. 105 (1886) pl. (118) 2, figs. 3-5—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 29-30. pl. 118, figs. 3-5—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 621—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 443, 509, 690-691, pl. 71, figs. 16-18—FENTON, Am. Jour. Sci., 4th ser., vol. 48 (1919) p. 373—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74.

Bradfordoceras consortale FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 39-41, pl. 7, fig. 4.

Loxoceras? *consortale* CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 330.

Panama and Salamanca conglomerates: New York and Pennsylvania; and possibly the Jennings of Maryland and the Lime Creek of Iowa.

Bradfordoceras gomphoides Flower and Caster

Bradfordoceras gomphoides FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 42, pl. 4, figs. 2, 3.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

Bradfordoceras hector (Hall)

Cyrtoceras Hector [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 346, pl. 90, fig. 11 [not 11-15]—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74.

Bradfordoceras hector FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 44-45.

Cyclostomiceras? *hector* CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 330.

Upper Chadakoin and lower Venango: near Warren, Pa.

Bradfordoceras hector alpha Flower and Caster

Bradfordoceras hector alpha FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 45-46, pl. 6, fig. 4.

Salamanca: Warren, Pa.

Bradfordoceras hector beta Flower and Caster

Bradfordoceras hector beta FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 46, pl. 6, figs. 5, 6, 8.

Salamanca: Warren, Pa.

Bradfordoceras hector delta Flower and Caster

Bradfordoceras hector delta FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 47-48, pl. 8, figs. 6-8.

Pope Hollow member of Salamanca: Warren, Pa.

Bradfordoceras hector eta Flower and Caster

Bradfordoceras hector eta FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 49, pl. 6, fig. 1.

Pope Hollow member of Salamanca: Warren Co., Pa.

Bradfordoceras hector gamma Flower and Caster

Bradfordoceras hector gamma FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 47, pl. 4, fig. 5.

Pope Hollow conglomerate member of Salamanca: Warren Co., Pa.

Bradfordoceras hector zeta Flower and Caster

Bradfordoceras hector zeta FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 48-49, pl. 6, fig. 2.

Salamanca: near Warren, Pa.

Bradfordoceras hindii (Whiteaves)

Actinoceras hindii WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1890) p. 101-102, pl. 6, figs. 4, 4a, 5—TYRRELL, Can. Geol. Survey, Ann. Rept. 5, sec. E (1892) p. 177, 187—KINDLE, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 257.

Orthoceras hindii WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1 (1892) p. 344—TYRRELL, Can. Geol. Survey, Ann. Rept. 5, sec. E (1892) p. 159, 162, 163, 167, 168, 172, 198, 208.

Manitoban: near Lake Winnipegosis, Manitoba; and possibly Onion Point, Lake Manitoba.

Bradfordoceras ignotum Flower and Caster

Bradfordoceras ignotum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 41, pl. 4, fig. 4.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

Bradfordoceras multicameratum Flower and Caster

Bradfordoceras multicameratum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 38-39, pl. 7, fig. 6.

Salamanca: near Warren, Pa.

Bradfordoceras sinuosum Flower and Caster

Cyrtoceras Hector [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 364, pl. 90, figs. 12-15 [not 11].

Orthoceras (Cyrtoceras?) hector LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 551, text fig.

Bradfordoceras sinuosum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 42-44, pl. 5, figs. 1-4, pl. 7, fig. 5, pl. 8, fig. 5.

Conewango: Pennsylvania and New York; and possibly the upper Conneaut of New York.

Bradfordoceras transversum Flower and Caster

Bradfordoceras transversum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 33-38, pl. 3, figs. 1-5, pl. 4, fig. 1, pl. 5, fig. 1, pl. 6, fig. 3, pl. 8, figs. 3, 4.

Lewis Run sandstone member of Venango, and Salamanca sandstones: northern Pennsylvania.

Bradfordoceras warrenense (Miller)

Orthoceras cochleatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879), p. 308-309, pl. 113, fig. 19. [Not *Orthoceras cochleatum* Schlotheim, 1813.]

Orthoceras warrenense MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 452—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74—CHADWICK, Geol. Soc. Am., vol. 46 (1935) p. 330, 336.

Bradfordoceras cochleatum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 12, 34, 49.

Venango: Warren, Pa.

BREVICOCERAS Flower (Poterioceratidae)GENOTYPE: *Brevicoceras casteri* Flower*Brevicoceras* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 24-25.**Brevicoceras? abruptum** (Hall)*Gomphoceras abruptum* HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 339, pl. 94, fig. 1—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 72.

Hamilton: Cazenovia, N. Y.

Brevicoceras? beta (Hall)*Gomphoceras beta* HALL, *Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups* (1861) p. 44; *N. Y. State Cab. Nat. Hist., Ann. Rept.* 15 (1862) p. 72, pl. 7, fig. 1; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 326, pl. 46, figs. 4, 5—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 590—GRABAU, *N. Y. State Mus., Bull.* 92 (1906) p. 327.*Cyrtoceras beta* HALL, *N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda* (1876) pl. 47, figs. 5, 6.*Brevicoceras? beta* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 70.

[Note: The above citations refer to more than one species.]

Schoharie: Schoharie and Albany counties, N. Y.

Brevicoceras casteri Flower*Brevicoceras casteri* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 25-26, pl. 1, figs. 5-7.

Windom member of Moscow: Moravia and Portland Point, N. Y.

Brevicoceras compactum Flower*Brevicoceras compactum* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 30-31, pl. 2, figs. 17-22.

Schoharie: Schoharie, N. Y.

Brevicoceras concavum Flower*Brevicoceras concavum* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 29-30, 70, pl. 1, figs. 15, 16.

Genesee: Genesee Valley, N. Y.

Brevicoceras conicum Flower*Gomphoceras absens* [part] HALL, *N. Y. Assembly Doc.* 105 (1886) pl. (122) 7, fig. 3 [not 1, 2]—BEECHER, *Pal. N. Y.*, vol. 5, pt. 2, suppl. (1888) p. 32, pl. 122, fig. 3 [not 1, 2]—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 589-590.*Brevicoceras conicum* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 32, 69, pl. 1, figs. 2, 3.

Onondaga: Clarence Hollow, N. Y.

Brevicoceras? cruciferum (Hall)*Gomphoceras? cruciferum* HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 328, pl. 93, fig. 4—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 591—FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 70.*Gomphoceras? crucifer* GRABAU, *N. Y. State Mus., Bull.* 92 (1906) p. 327.

[Note: The generic affinities of this species are very uncertain.]

Schoharie: Schoharie and Albany counties, N. Y.

Brevioceras? manes (Hall)

Gomphoceras manes HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 339-340; N. Y. Assembly Doc. 105 (1886) pl. (123) 8, fig. 2—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 34, pl. 123, fig. 2—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 22—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 291, text fig. 226—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 591—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 27; N. Y. State Mus. Bull. 137 (1910) p. 28—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Poterioceras? manes CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 311.

Brevioceras? manes FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 28-29, 72.

Genesee and possibly Tully: Erie Co., N. Y.

Brevioceras? mitriforme (Clarke)

Gomphoceras mitriforme CLARKE, N. Y. State Geol., Ann. Rept. 13 (1894) p. 171-172, pl. 3, fig. 1; N. Y. State Mus., Ann. Rept. 47 (1894) p. 365-366, pl. 3, fig. 1—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 592—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 46—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 75-76.

Marcellus: Chapinville, N. Y.

Brevioceras? ovoides (Hall)

Oncoceras ovoides HALL, Pal. N. Y., vol. 3 (1859) p. 342, pl. 69, figs. 2A-2B—BASSLER, U. S. National Mus., Bull. 92, vol. 2 (1915) p. 876—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 68. [Note: The generic affinities of this species are very uncertain.]

Keyser: Herkimer Co., N. Y.

Brevioceras planum (Hall)

Gomphoceras? planum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 352-353, pl. 57, figs. 1, 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 593.

Brevioceras planum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 27-28, 75.

Hamilton: Borodino, N. Y.

Brevioceras pompeyense Flower

Brevioceras pompeyense FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 26-27, pl. 1, fig. 1, pl. 2, figs. 1, 2.

Pompey member of Hamilton: Pratt's Falls, N. Y.

Brevioceras rotundum Flower

Brevioceras rotundum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 31-32, 70, pl. 1, figs. 10-12.

Schoharie: Schoharie, N. Y.

Brevioceras? rude (Hall)

Gomphoceras rude HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 327, pl. 93, fig. 1—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 594—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 16, 70.

Schoharie: Schoharie and Albany counties, N. Y.

Brevioceras wellsii Flower

Gomphoceras raphanus [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 347-348, pl. 94, fig. 5 [not 2-4, 10].

Brevioceras wellsii FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 28, 73, pl. 1, figs. 8, 9.

Skaneateles shale member of Hamilton: Cazenovia, Delphi Falls, and Skaneateles Lake, N. Y.

CARLLOCERAS Flower and Caster (Koninckioceratidae)

GENOTYPE: *Carlloceras garlandense* Flower and Caster

Carlloceras FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 24-25.

Carlloceras garlandense Flower and Caster

Carlloceras garlandensis FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 25-27, pl. 2, figs. 12-14.

Salamanca: Garland, Pa.

CASTEROCERAS Flower (Ryticeratidae)

GENOTYPE: *Cyrtoceras alternatum* Hall

Casteroceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 46-47.

Casteroceras alternatum (Hall)

Cyrtoceras undulatum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 47, figs. 9, 10—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242. [Not *Cyrtoceras undulatus* VANUXEM, 1842.]

Cyrtoceras alternatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 365-366, pl. 46, figs. 12, 13—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 124—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 581—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Thoracoceras wilsoni CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125, 126-127, pl. 8, figs. 1-5—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 650.

Casteroceras alternatum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 47-50, pl. 4, fig. 5, pl. 5, figs. 2-5; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 57.

Cherry Valley limestone member of Marcellus: Schoharie, Cherry Valley, Stockbridge, and Manlius, N. Y.; and possibly the Columbus limestone near Columbus, Ohio.

Casteroceras tyrrellii (Whiteaves)

Orthoceras (Thoracoceras) tyrrellii WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 100-101, pl. 7, figs. 1-4; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 344—KINDLE, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 253.

Casteroceras tyrrellii FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 47, 50; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 57.

Winnipegosis: Manitoba.

CENTROCERAS Hyatt (Centroceratidae)

GENOTYPE: *Goniatites marcellensis* Vanuxem

Centroceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 283-284—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 380—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 163-164—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 497—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 294—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 525; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 606—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 93—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 527—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 55-56.

Centroceras ammonum (Hall)

Nautilus (Discites) ammonis HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 425-426—Beecher, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 38, pl. 125, fig. 1—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 359.

Centroceras (Discites) ammonis HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 497.

Discites ammonis STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Dundee: Michigan [the type came from a glacial boulder]; and possibly the Delaware of central Ohio.

Centroceras (Discites) ammonis (Hall) = **Centroceras ammonum****Centroceras? indianense** (Kindle)

Gyroceras indianense KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 738, pl. 24, fig. 1, pl. 25, figs. 1, 1a.

Jeffersonville?: Jefferson Co., Ind.

Centroceras marcellense (Vanuxem)

Goniatites marcellensis VANUXEM, Geol. N. Y., pt. 3, Survey third geol. district (1842) p. 146, 147, text fig. 35 (2).

Goniatites expansus [part] HALL, N. Y., State Cab., Nat. Hist., Ann. Rept. 13 (1860) p. 96-97.

Nautilus (Discites) ornatus HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 103, text figs. 21, 22.

Nautilus ornatus LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 11A, figs. 5, 6—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 444.

Goniatites [Agoniatites] Marcellensis MEEK, U. S. Geol. Exploration Fortieth Parallel (King) vol. 4 (1877) p. 99.

Nautilus (Discites) marcellensis HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 65, figs. 1, 2; Pal. N. Y., vol. 5, pt. 2 (1879) p. 428-430, 431, pl. 65, figs. 1, 2, pl. 109, figs. 9-12; N. Y. Assembly Doc. 105 (1886) pl. 126 (11), fig. 6—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39, pl. 126, fig. 6—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 211, 212, 239, text fig. 156—GOLDRING, N. Y. State Mus., Bull. 303 (1935) text fig. 57N.

Centroceras (Discites) Marcellense HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 284.

Nautilus (Centroceras) marcellensis GRABAU, Buffalo Soc. Nat. Sci., Bull. vol. 6 (1899) p. 294, text fig. 228.

Centroceras marcellense GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 93, text fig. 1316—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 56-58, pl. 7, fig. 4, pl. 8, fig. 6.

Discites marcellensis MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 436, text fig. 733—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125.

Nautilus marcellensis LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 445, text fig.—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 23, 91.

Marcellus: New York and Pennsylvania; and possibly the Genesee of Pennsylvania.

Centroceras (Discites) Marcellense (Vanuxem) = **Centroceras marcellense****Centroceras ohioense** (Meek)

Gyroceras (Trochoceras?) Ohioense MEEK, Philadelphia Acad. Nat. Sci., Pr. (1871) p. 87.

Gyroceratites (Trochoceras?) Ohioensis MEEK, Ohio Geol. Survey, vol. 1, pt. 2, Pal. (1873) p. 230-231, pl. 22, fig. 1.

Centroceras (Gyroceras) Ohioense HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 497.

Gyroceratites ohioensis STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 34, 65, 168.

Centroceras ohioense GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 93, text fig. 1315—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 119, 130, 240.

Gyroceras (*Centroceras*) *ohioense* GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 359.

Gyroceras ohioense WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 243—SHERZER [Grabau], U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7.

Columbus and Delaware: Ohio; and possibly the Dundee of Michigan and the Middle Devonian of Ontario.

Centroceras (**Gyroceras**) **ohioense** (Meek) = **Centroceras ohioense**

Centroceras pratti (Barris)

Gyroceras pratti BARRIS, Davenport Acad. Nat. Sci., Pr., vol. 2 (1880) p. 287, pl. 10, figs. 1, 2—NORTON, Iowa Geol. Survey, vol. 9 (1899) p. 451—EKBLAW, Ill. Acad. Sci., Tr., vol. 5 (1912) p. 107—NORTON, Iowa Geol. Survey, vol. 27 (1920) p. 541.

Rhyticeras barrisi SAVAGE, Ill. State Acad. Sci., Tr., vol. 14 (1922) p. 206. [Prof. Savage, in a personal communication, states that this is a misprint and was intended to read *Rhyticeras pratti* (Barris).]

Davenport: Scott Co., Iowa, and Rock Island Co., Ill.

Ceratiocaris longicaudus Hall [part] =? **Bactrites? aciculum**

Clostomiceras metula (Hall) = **Nephriticerina metula**

Clymenia (**Platyclymenia**) **americana** Raymond = **Platyclymenia** (**Pleuroclymenia**) **americana**

Clymenia? complanata Hall =? **Probeloceras lutheri**

Clymenia Erato Hall =? **Probeloceras lutheri**

Clymenia neapolitana Clarke = **Acanthoclymenia neapolitana**

Coleolus aciculum (Hall) =? **Bactrites? aciculum**

COPHINOCERAS Hyatt (Ryticeratidae)

GENOTYPE: *Cyrtocera ornata* Goldfuss

Kophinoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 285–286—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 374, 381—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 518.

Cophinoceras HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 522; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 603.

Gyroceras [part] FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 53–55.

Cophinoceras canadense (Whiteaves)

Gyroceras canadense WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 106, pl. 9, figs. 1–2; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 345—MCLEARN, Int. Geol. Cong., Twelfth, Guide Book 8 (1913) p. 367—KINDLE, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 253.

Winnipegosis: Dawson Bay, Lake Winnipegosis, Manitoba.

Cophinoceras filicinatum (Whiteaves)

Gyroceras filicinatum WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 107, pl. 9, fig. 3; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 346—KINDLE, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 253.

Winnipegosis: Dawson Bay, Lake Winnipegosis, Manitoba.

Cophinoceras ornatum (Goldfuss)?

Gyroceras ornatum STAUFFER, Univ. Cal., Pub. Geol. Sci., vol. 19, no. 4 (1930) p. 96, 102. [Probably not *Cyrtocera ornata* GOLDFUSS, 1832.]

Kennett: Kennett in Klamath Mts., Cal.

Cophinoceras spinosum (Conrad)

Phragmoceras spinosum CONRAD, N. Y. Geol. Survey, Ann. Rept. 4 (1840) p. 206.

Gyroceras (*Cyrtoceras?*) *spinosum* HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 41; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 69; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 50, figs. 1-4, pl. 51, fig. 1, pl. 52, fig. 1.

Gyroceras? sp. HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 50, fig. 5.

Gyroceras spinosum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 46, fig. 8; Pal. N. Y., vol. 5, pt. 2 (1879) p. 382-384, pl. 47, fig. 8, pl. 48, figs. 1-5, pl. 49, fig. 1, pl. 98, figs. 1, 2, 5-7, pl. 99, figs. 1-8—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 189, 190, 327, text fig. 114—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 23.

Gyroceras (*Cophinoceras*) *spinosum* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 597-599.

Ryticeras spinosum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 84, text fig. 1301.

Schoharie: Schoharie, Ulster, and Albany counties, N. Y.

CRYPTOCERAS d'Orbigny [not Barrande] = **NASSAUOCERAS**

Cyclostomiceras cretaceum (Whitfield) = **Acleistoceras? cretaceum**

Cyclostomiceras? hector (Hall) = **Bradfordoceras hector**

Cyclostomiceras metula (Hall) = **Nephriticerina metula**

Cyclostomiceras orodes (Billings) = **Euryrizoceras orodes**

Cyrtoceras absens Hall = **Turnoceras absens**

Cyrtoceras aemulum Hall = **Ryticeras aemulum**

Cyrtoceras (**Zitteloceras**) **aemulum** Hall = **Ryticeras aemulum**

Cyrtoceras albanii Clarke = **Acleistoceras? albanii**

Cyrtoceras alternatum Hall = **Casteroceras alternatum**

Cyrtoceras ammon Billings = **Ryticeras ammon**

Cyrtoceras Belus Billings = **Nephriticerina? bela**

Cyrtoceras beta (Hall) = **Brevioceras? beta**

Cyrtoceras citum Hall = **Ryticeras citum**

Cyrtoceras (**Zitteloceras**) **citum** Hall = **Ryticeras citum**

Cyrtoceras clavatum Hall = **Verticoceras? clavatum**

Cyrtoceras conradi (Hall) = **Verticoceras conradi**

Cyrtoceras cretaceum Whitfield = **Acleistoceras? cretaceum**

Cyrtoceras densum Hall = **Ormoceras densum**

Cyrtoceras dictyum White = **Ryticeras? dictyum**

Cyrtoceras? dubium Swartz = **Acleistoceras? dubium**

Cyrtoceras eugenium Hall = **Ryticeras eugenium**

Cyrtoceras (**Ryticeras**) **eugenium** Hall = **Ryticeras eugenium**

Cyrtoceras (**Zitteloceras**) **eugenium** Hall = **Ryticeras eugenium**

Cyrtoceras expansum Kindle = **Nephriticeras expansum**

Cyrtoceras (**Gomphoceras?**) **formosum** Hall = **Cyrtospyroceras formosum**

Cyrtoceras? gibbosum Hall = **Micronoceras gibbosum**

Cyrtoceras Hector Hall = **Bradfordoceras hector** and **B. sinuosum**

Cyrtoceras jason Hall = **Ryticeras jason**

Cyrtoceras (**Ryticeras**) **jason** (Hall) = **Ryticeras jason**

Cyrtoceras liratum (Hall) = **Lyrioceras dubium**

Cyrtoceras matheri Conrad = **Halloceras matheri**

Cyrtoceras maximum Conrad = **Nephriticeras maximum**

Cyrtoceras metula Hall = **Nephriticerina metula**

Cyrtoceras (**Gomphoceras**) **metula** Hall = **Nephriticerina metula**

- Cyrtoceras morsum** Hall = **Cyrtospyroceras morsum**
Cyrtoceras Nevadense Walcott = **Nephriticerina? nevadensis**
Cyrtoceras occidentale Whiteaves = **Nephriticerina occidentalis**
Cyrtoceras ohioense Meek = **Ryticeras ohioense**
Cyrtoceras olenus Hall = **Naedyceras olenus**
Cyrtoceras opimum Keyes = **Naedyceras opimum**
Cyrtoceras orion Hall = **Naedyceras olenus**
Cyrtoceras orodes Billings = **Euryrizoceras orodes**
Cyrtoceras (Cyclostomiceras) orodes Billings = **Euryrizoceras orodes**
Cyrtoceras sacculum (Meek and Worthen) = **Acleistoceras? sacculum**
Cyrtoceras subrectum Hall = **Herkimeroceras subrectum**
Cyrtoceras transversum Hall = **Tetranodoceras transversum**
Cyrtoceras trivolvus Conrad = **Ryticeras trivolve**
Cyrtoceras undulatum Hall [not Vanuxem] = **Casteroceras alternatum**
Cyrtoceras undulatus Vanuxem [not Hall] = **Halloceras undulatum**
Cyrtoceras (Gyroceras?) undulatum (Vanuxem) = **Halloceras undulatum**
Cyrtoceras sp. Etheridge = **Offleyoceras arcticum**
Cyrtoceratites ohioensis (Meek) = **Ryticeras ohioense**
Cyrtoclymenia neapolitana Clarke = **Acanthoclymenia neapolitana**

CYRTOGOMPHUS Flower (Poterioceratidae)

GENOTYPE: *Cyrtogomphus curvatus* Flower

Cyrtogomphus FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 43-44.

Cyrtogomphus curvatus Flower

Cyrtogomphus curvatus FLOWER, *Palaeontographica Americana*, vol. 2, no. 9, (1938) p. 44-45, text fig. 1, pl. 2, figs. 26, 27.

Tichenor limestone: Cazenovia Creek, N. Y.

Cyrtogomphus lunatus (Hall)

Gomphoceras lunatum HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 341-343, pl. 95, figs. 10-13—TALBOT, *Am. Jour. Sci.*, 4th ser., vol. 16 (1903) p. 150—HOUGHTON, *Buffalo Soc. Nat. Sci., Bull.*, vol. 11 (1914) p. 91.

Poterioceras lunatum GRABAU and SHIMER, *North American index fossils, Invertebrates*, vol. 2 (1910) p. 129, text fig. 1377.

Cyrtogomphus lunatus FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 17, 45, 73.

Hamilton and possibly Marcellus: western New York.

Cyrtogomphus pinguis (Hall)

Gomphoceras pingue HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 346-347, pl. 94, fig. 9, pl. 95, fig. 6—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 593—STAUFFER, *Ohio Nat.*, vol. 8, no. 5 (1908) p. 276; *Ohio Geol. Survey*, 4th ser., *Bull.* 10 (1909) p. 149, 182—PROSSER, KINDLE, and SWARTZ, *Md. Geol. Survey, Middle and Upper Devonian* (1913) p. 77, 108, 318-319, pl. 42, figs. 1-3.

Cyrtogomphus pinguis FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 17, 73.

Hamilton: Cazenovia, N. Y.; and possibly the Middle Devonian of northwestern Ohio and the Romney of western Maryland.

Cyrtogomphus thedfordensis Flower

Cyrtogomphus thedfordensis FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 45-46, pl. 2, figs. 26, 27.

Hamilton: Thedford, Ontario.

CYRTOSPYROCERAS Flower (Pseudorthoceratidae)GENOTYPE: *Cyrtospyroceras reimanni* Flower*Cyrtospyroceras* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 50-51.**Cyrtospyroceras formosum** (Hall)*Cyrtoceras* (*Gomphoceras?*) *formosum* HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 362, pl. 95, figs. 8, 9—CLARKE and RUEDEMANN, *N. Y. State Mus.*, Bull. 65 (1903) p. 584.*Cyrtospyroceras formosum* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 52-53, pl. 1, fig. 17.

Hamilton: Dresden, N. Y.

Cyrtospyroceras morsum (Hall)*Cyrtoceras morsum* HALL, *Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups* (1861) p. 43; *N. Y. State Cab. Nat. Hist.*, Ann. Rept. 15 (1862) p. 71, pl. 9, fig. 6; *N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda* (1876) pl. 46, figs. 3, 4; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 367, pl. 47, figs. 3, 4—CLARKE and RUEDEMANN, *N. Y. State Mus.*, Bull. 65 (1903) p. 585—GRABAU, *N. Y. State Mus.*, Bull. 92 (1906) p. 327.*Cyrtospyroceras?* *morsum* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 53.

Onondaga: New York; and possibly the Schoharie of New York.

Cyrtospyroceras reimanni Flower*Cyrtospyroceras reimanni* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 51-52, text fig. 2, pl. 3, figs. 5-7.

Hamilton: western New York.

DAWSONOCERAS Hyatt (Cycloceratidae)GENOTYPE: *Dawsonoceras hyatti* Foerste*Dawsonoceras* HYATT, *Boston Soc. Nat. Hist.*, Pr., vol. 22 (1883) p. 276—ZITTEL, *Handb. Pal.*, Abt. 1, *Palaeozoologie*, Bd. 2 (1884) p. 369—HYATT, *Zittel-Eastman Textb. Pal.*, vol. 1 (1900) p. 518-519, text fig. 1063—CLARKE and RUEDEMANN, *N. Y. State Mus.*, Mem. 5 (1903) p. 82—GRABAU and SHIMER, *North American index fossils, Invertebrates*, vol. 2 (1910) p. 58—HYATT, *Zittel-Eastman Textb. Pal.*, vol. 1, ed. 2 (1913) p. 599, text fig. 1112—BASSLER, *U. S. Nat. Mus.*, Bull. 92, vol. 1 (1915) p. 387—FOERSTE, *Denison Univ. Bull.*, Jour. Sci. Lab., vol. 20 (1924) p. 225; *Denison Univ. Bull. Jour. Sci. Lab.*, vol. 23 (1928) p. 26-28.**Dawsonoceras americanum** (Foord)*Orthoceras undulatum* [part] HALL, *Pal. N. Y.*, vol. 2 (1852) p. 293-294, pl. 64, fig. 1a. [Not *Orthoceras undulatum* Sowerby, 1814; not *O. undulatum* Owen, 1844.]*Orthoceras annulatum americanum* [part] FOORD, *Cat. foss. Cephalopoda in British Mus.*, pt. 1 (1888) p. 56-57.*Dawsonoceras annulatum americanum* [part] CLARKE and RUEDEMANN, *N. Y. State Mus.*, Mem. 5 (1903) p. 81-83—GRABAU and SHIMER, *North American index fossils, Invertebrates*, vol. 2 (1910) p. 58—GRABAU and SHERZER, *Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2* (1910) p. 49—GRABAU, *Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2* (1910) p. 196-197, 212, pl. 28, fig. 8, pl. 29, fig. 1—STAUFFER, *Can. Geol. Survey, Mem.* 34 (1915) p. 278, 284.*Dawsonoceras americanum* FOERSTE, *Denison Univ. Bull.*, Jour. Sci. Lab., vol. 23 (1928) p. 34-36, 279, pl. 5, figs. 2-4, pl. 28, figs. 4A, 4B, pl. 61, fig. 5.

Middle Silurian: New York, Indiana, and Kentucky; and possibly the Detroit River of Michigan and Ontario.

Dawsonoceras annulatum americanum Foord [part] = **Dawsonoceras americanum**
Dawsonoceras falsum (Fenton and Fenton)

Spyroceras? *falsum* FENTON and FENTON, Univ. Mich., Mus. Geol., Contr., vol. 1 (1924) p. 196, pl. 40, fig. 17.

Hackberry: Rockford, Iowa.

Dawsonoceras thoas (Hall) = **Spyroceras thoas**

DIADIPLOCERAS Hyatt (Tainoceratidae)

GENOTYPE: *Diadiploceras quadratum* Hall [Hyatt]

Diadiploceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 268—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 378, 381—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 524; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 605—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 54.

Diadiploceras inopinatum (Hall)

Nautilus (Discites) inopinatus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 426-427, pl. 110, figs. 1, 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 613—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 359.

Diadiploceras (Discites) inopinatum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 268.

Pleuromutilus inopinatus FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 137.

Discites inopinatus Stauffer, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Nautilus inopinatus SHERZER, U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7.

Diadiploceras inopinatum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 54.

Onondaga: Sandusky, Ohio; and possibly the Dundee of Michigan.

Diadiploceras (Discites) inopinatum (Hall) = **Diadiploceras inopinatum**

Diadiploceras quadratum Hall

Diadiploceras quadratum [Hall] HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 268—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 54.

Nautilus quadratus FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 54.

Devonian: New York?

DIAGOCERAS Flower (Orthocerotidae)

GENOTYPE: *Orthoceras aptum* Hall

Diagoceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 23.

Diagoceras aptum (Hall)

Orthoceras typum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 38, fig. 8 [not 4-7, 9, 10].

Orthoceras aptum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 282-293, pl. 38, fig. 8—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125.

Diagoceras aptum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 23-25, pl. 1, figs. 5-8, pl. 2, fig. 1.

Cherry Valley member of Marcellus: Schoharie, Stockbridge, Manlius, Marcellus, and Union Springs, N. Y.

Discites ammonis (Hall) = **Centroceras ammonum**

Discites inopinatus (Hall) = **Diadiploceras inopinatum**

Discites marcellensis (Vanuxem) = **Centroceras marcellense**

ELEUSOCERAS Flower (Poterioceratidae)GENOTYPE: *Eleusoceras nicholsi* Flower*Eleusoceras* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 55.*Eleusoceras nicholsi* Flower*Eleusoceras nicholsi* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 55-56, pl. 3, figs. 1, 2.

Skaneateles shale member of Hamilton: Pratt's Falls, Onondaga Co., N. Y.

Endoceras? ommaneyi Foord = *Armenoceras ommaneyi* and *A. donetti**Endoceras schei* Foerste = *Michelinoceras? scheii**ENDOPLANOCERAS* Flower (Poterioceratidae)GENOTYPE: *Endoplanoceras gomphus* Flower*Endoplanoceras* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 53-54.*Endoplanoceras gomphus* Flower*Endoplanoceras gomphus* FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 54-55, pl. 3, figs. 16, 17.

Onondaga: near Bridgewater, N. Y.

EOBELOCERAS Schindewolf (Beloceratidae)GENOTYPE: *Ammonites multiseptatus* von Buch*Eobeloceras* SCHINDEWOLF, *Deutsch. geol. Ges., Zeitschr.*, Bd. 88 (1937) p. 690—MILLER, *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 136-137.*Eobeloceras iynx* (Clarke)*Beloceras iynx* CLARKE, *N. Y. State Geol., Ann. Rept.* 15 (1897) p. 53 [*nomen nudum*]; *N. Y. State Mus., Ann. Rept.* 49, vol. 2 (1898) p. 53 [*nomen nudum*]; *N. Y. State Geol., Ann. Rept.* 16 (1899) p. 103-104, text figs. 77-79, pl. 7, figs. 11-16 [also issued as *N. Y. State Mus., Ann. Rept.* 50]—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 579-580—CLARKE and LUTHER, *N. Y. State Mus., Bull.* 63 (1904) p. 61; CLARKE, *N. Y. State Mus., Mem.* 6 (1904) p. 358, 361, 366, 370, 380, 381; *N. Y. State Mus., Ann. Rept.* 57, vol. 3, appd. 8 (1905) p. 358, 361, 366, 370, 380, 381—CHADWICK, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 315.*Probeloceras lynx* FRECH, *Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients*, Bd. 14 (1902) p. 60—WEDEKIND, *Palaeontographica*, Bd. 62 (1918) p. 131.*Timanites (Probeloceras) lynx* FRECH, *Fossilium Catalogus*, I, *Animalia*, pars 1 (1913) p. 26.*Omipliomerceras (Probeloceras) iynx* SOBOLEW, *Warschauer polyt. Inst., Mitt.* (1913) p. 120.*Eobeloceras iynx* SCHINDEWOLF, *Deutsch. geol. Ges., Zeitschr.*, Bd. 88 (1937) p. 690—MILLER, *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 137-139, text fig. 29, pl. 30, figs. 12-17.

Cashaqua shale member of Naples: Naples, N. Y.

EPITORNOCERAS Frech = *TORNOCERAS**EUDOCERAS* Hyatt (Eudoceratidae)GENOTYPE: *Trochoceras? (Goniceras?) pandum* Hall*Eudoceras* HYATT, *Boston Soc. Nat. Hist., Pr.*, vol. 22 (1883) p. 287—ZITTEL, *Handb. Pal., Abt. 1, Palaeozoologie*, Bd. 2 (1884) p. 370—HYATT, *Texas Geol. Survey, Ann. Rept.* 4 (1893) p. 465—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 587—FOERSTE and TEICHERT, *Denison Univ. Bull., Jour. Sci. Lab.*, vol. 25 (1930) p. 207.

Eudoceras pandum (Hall)

Trochoceras? (*Gonioceras?*) *pandum* HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 403, pl. 111, fig. 4; N. Y. Assembly Doc. 105 (1886) pl. (117) 1, figs. 3-5—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 37, pl. 117, figs. 3-5.

Eudoceras pandum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 587-588.

Schoharie: Schoharie and Albany counties, N. Y.

EURYZIZOCERAS Foerste (Poterioceratidae)

GENOTYPE: *Euryrizoceras chadwicki* Foerste

Euryrizoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 25 (1930) p. 81.

Euryrizoceras orodes (Billings)

Cyrtoceras orodes BILLINGS, Can. Geol. Survey, Pal. Foss., vol. 1 (1865) p. 162 [advance sheets, 1862]—WHITEAVES, Can. Geol. Survey, Pal. Foss., vol. 3, pt. 2 (1895) p. 103, pl. 14, figs. 7-9—CLARKE and RUEDEMANN, N. Y. State Mus., Mem. 5 (1903) p. 88-89, pl. 15, figs. 3-11 [also issued as N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8, 1905]—GRABAU and SHERZER, Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2 (1910) p. 49—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 275, 284—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1925) p. 12-13.

Cyrtoceras (*Cyclostomiceras*) *orodes* GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2 (1910) p. 197-198, 213, pl. 28, figs. 6, 7, pl. 29, figs. 2, 3.

Cyclostomiceras orodes GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 120, text figs. 1358-1360—Bassler, U. S. Nat. Mus., Bull. 92, vol. 1 (1915) p. 327.

Silurian: Ontario and New York; and possibly the Detroit River of Michigan and Ontario.

EXOXYRTOCERAS Flower (Poterioceratidae)

GENOTYPE: *Exocyrtoceras exoticum* Flower

Exocyrtoceras FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 37-38.

Exocyrtoceras constrictum Flower

Exocyrtoceras constrictum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 40, 70, pl. 2, figs. 3-5.

Schoharie: Schoharie, N. Y.

Exocyrtoceras exoticum Flower

Exocyrtoceras exoticum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 38-39, pl. 2, figs. 12-15.

Columbus: near Columbus, Ohio.

Exocyrtoceras micron Flower

Gomphoceras absens [part] HALL, N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 1 [not 2, 3]—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 122, fig. 1 [not 2, 3]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 589-590.

Exocyrtoceras micron FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 40-41, 69, pl. 4, figs. 8-10.

Schoharie: Schoharie, N. Y.

Exocyrtoceras? missouriense (Branson and Williams)

Gomphoceras missouriense BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1923) p. 160, pl. 37, figs. 2-5, pl. 38, fig. 2—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 38.

Grand Tower: Little Saline Creek, southeastern Missouri.

Exocyrtoceras sinuatum Flower

Gomphoceras absens [part] HALL, N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 2 [not 1, 2]—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, pl. 122, fig. 2 [not 1, 3]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 589-590.
Exocyrtoceras sinuatum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 39-40, 69, pl. 2, figs. 6-11.

Schoharie: Schoharie, N. Y.

GEISONOCERAS Hyatt (Orthocerotidae)

GENOTYPE: *Orthoceras rivale* Barrande

Geisonoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 275—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 369—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 518, text fig. 1062—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 47—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 598, text fig. 1111—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 521—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 20 (1924) p. 221-222; Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 4-5; Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 249.

Geisonoceras accelerans Raymond = **Michelinoceras?** *accelerans***Geisonoceras anguis** (Hall)

Orthoceras anguis HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 312, pl. 89, fig. 9—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 618—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Naples: Cascadilla Creek, Naples, N. Y.

Geisonoceras artestriatum Foerste

Geisonoceras artestriatum FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 9-10, pl. 2, fig. 3.

Middle Devonian: Gaase-fjorden (Goose-fjord), southwestern Ellesmere Island.

Geisonoceras aulax (Hall)

Orthoceras aulax HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 293, pl. 84, fig. 18—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 289-290, text fig. 224—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 618—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 77, 108, 313-314, pl. 40, figs. 8, 9—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Hamilton: Erie Co., N. Y.; and possibly the Romney of Maryland.

Geisonoceras? *carinosum* (Hall)

Orthoceras? n. sp. HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, fig. 7.

Orthoceras carinosum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 258-259, pl. 35, fig. 11—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 620—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Geisonoceras filosum (Clarke)

Orthoceras filosum CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 52, pl. 2, figs. 12-14—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 549-550, text figs.—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—STOSE and SWARTZ [Clarke],

U. S. Geol. Survey, Geol. Atlas of U. S., folio 179 (1912) p. 11—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 363, 412, 443, 691-692, pl. 71, figs. 12, 13—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 25.

Naples, New York; and possibly the Jennings of Maryland and West Virginia.

Geisonoceras hagersvillense (Whiteaves)

Orthoceras hagersvillense WHITEAVES, Ottawa Nat., vol. 12, no. 6 (1898) p. 126; Can. Geol. Survey, Pal. Foss., vol. 3, pt. 4 (1906) p. 325, pl. 33, figs. 4, 4a.

Onondaga: Hagersville, Ontario.

Geisonoceras linteum (Hall)

Orthoceras linteum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 277, pl. 87, figs. 3, 4—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 628.

Hamilton: Leonardsville, N. Y.

Geisonoceras normale Raymond = **Michelinoceras?** normale

Geisonoceras subtextile (Hall)

Orthoceras subtextile HALL, Pal. N. Y., vol. 3 (1859) p. 344, pl. 71, fig. 2—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320.

Coeymans: Schoharie, N. Y.

Geisonoceras sverdrupi Foerste

Geisonoceras sverdrupi FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 8-9, pl. 2, figs. 1, 2.

Middle Devonian: Gaase-fjorden (Goose-fjord), southwestern Ellesmere Island.

Geisonoceras textum (Hall)

Orthoceras textum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 285-286, pl. 113, fig. 14.

Sellersburg?: Falls of the Ohio.

Geisonoceras valdestriatum Foerste

Geisonoceras valdestriatum FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 10-11, pl. 2, figs. 4, 5.

Middle Devonian: Gaase-fjorden (Goose-fjord), southwestern Ellesmere Island.

GEPHUROCERAS ["GEPHYROCERAS"] Hyatt = **MANTICOCERAS**

Gephyroceras accelerans (Clarke) = **Manticoceras accelerans**

Gephyroceras apprimatum (Clarke) = **Manticoceras apprimatum**

Gephyroceras cataphractum Clarke = **Manticoceras cataphractum**

Gephyroceras ceryceum Clarke =? **Manticoceras genundewa**

Gephyroceras (Goniatites) **complanatum** (Hall) =? **Probeloceras lutheri**

Gephyroceras contractum (Clarke) = **Manticoceras contractum**

Gephyroceras? **delphiense** (Kindle) = **Manticoceras delphiense** and **M. kindlei**

Gephyroceras cf. **G. domanicense** Holzappel = **Manticoceras clarkei**

Gephyroceras fasciculatum (Clarke) = **Manticoceras fasciculatum**

Gephyroceras genundewa Clarke = **Manticoceras genundewa**

Gephyroceras Genundewah Clarke = **Manticoceras genundewa**

Gephyroceras? (Probeloceras?) *genundewa* Clarke = *Manticoceras genundewa*
 Gephyroceras *holzapfeli* Clarke = *Manticoceras holzapfeli*
 Gephyroceras? (Probeloceras?) *Holzapfeli* Clarke = *Manticoceras holzapfeli*
 Gephyroceras *nodifer* (Clarke) = *Manticoceras nodifer*
 Gephyroceras *oxy* (Clarke) = *Manticoceras oxy*
 Gephyroceras *patersoni* ["*pattersoni*"] (Hall) = *Manticoceras sinuosum*
 Gephyroceras *pattersoni styliophilum* (Clarke) = *Manticoceras styliophylum*
 Gephyroceras *perlatum* (Hall) = *Manticoceras perlatum*
 Gephyroceras (Manticoceras) *perlatum* (Hall) = *Manticoceras perlatum*
 Gephyroceras *rhynchostoma* (Clarke) = *Manticoceras rhynchostoma*
 Gephyroceras *sinuosum* (Hall) = *Manticoceras sinuosum*
 Gephyroceras *sororium* (Clarke) = *Manticoceras sororium*
 Gephyroceras *tardum* (Clarke) = *Manticoceras tardum*
 Gephyroceras *vagans* (Clarke) = *Manticoceras vagans*
 Gephyroceras? *wabashense* = *Werneroceras wabashense*

GIGANTOCERAS Hyatt (Bickmoritidae)

GENOTYPE: *Gyroceras* (*Nautilus?*) *inelegans* Meek

Gigantoceras HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 527—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 114—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 608—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 520—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1925) p. 37-38.

***Gigantoceras inelegans* (Meek)**

Gyroceras (*Nautilus?*) *inelegans* MEEK, Philadelphia Acad. Nat. Sci., Pr. (1871) p. 89.

Gyroceratites (*Nautilus?*) *inelegans* MEEK, Ohio Geol. Survey, Rept., vol. 1, pt. 2, Pal. (1873) p. 232, pl. 21, fig. 1.

Gyroceras inelegans KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 739, pl. 28, fig. 1—SHERZER, U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7—SAVAGE, Ky. Geol. Survey, 6th ser., vol. 36 (1931) p. 228.

Nephriticeras inelegans HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 535.

Gigantoceras inelegans HYATT, Zittel-Eastman Textb. Pal. (1900) p. 527—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 114, text fig. 1349—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 608—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 116, 119, 130, 135, 240—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1925) p. 37-38.

Gyroceratites inelegans STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Gyroceras (*Gigantoceras*) *inelegans* GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 359.

Columbus: central Ohio; and possibly the Delaware of Ohio, the Jeffersonville at the Falls of the Ohio, the Dundee of southeastern Michigan, and the Middle Devonian of Ontario.

Gomphoceras abruptum* Hall = *Brevioceras? abruptum

Gomphoceras absens* (Hall) = *Turnoceras absens*, *Exocyrtoceras micron*, *E. constrictum*, *E. sinuatum*, *Brevioceras conicum*, and *B. compactum

Gomphoceras ajax* Hall = *Acleistoceras? ajax

Gomphoceras amphora* Whitfield = *Acleistoceras? amphora

Gomphoceras arcuatum* Hall [Grabau] = *Acleistoceras crenatum

Gomphoceras bellatulum* Rowley = *Acleistoceras? bellatulum

Gomphoceras beta* Hall = *Brevioceras? beta

Gomphoceras breviposticum* Whitfield = *Acleistoceras? breviposticum

Gomphoceras calvini* Cleland = *Acleistoceras calvini

- Gomphoceras cammarus* Hall = *Acleistoceras?* *cammarus*
Gomphoceras clavatum (Hall) = *Verticoceras?* *clavatum*
Gomphoceras (*Poterioceras*) *clavatum* (Hall) = *Verticoceras?* *clavatum*
Gomphoceras conradi Hall = *Verticoceras conradi* and *V. erectum*
Gomphoceras (*Apioceras*) *Conradi* Hall = *Verticoceras conradi*
Gomphoceras crenatum Hall = *Acleistoceras crenatum*
Gomphoceras? *crucifer* Hall [Grabau] = *Brevicoceras?* *cruciferum*
Gomphoceras? *cruciferum* Hall = *Brevicoceras?* *cruciferum*
Gomphoceras eximium Hall = *Acleistoceras eximium*
Gomphoceras facetum Rowley = *Acleistoceras?* *facetum*
Gomphoceras fax Hall = *Micronoceras?* *fax*
Gomphoceras (*Poterioceras*) *fax* Hall = *Micronoceras?* *fax*
Gomphoceras fischeri Hall = *Acleistoceras fischeri*
Gomphoceras (*Apioceras*) *fischeri* Hall = *Acleistoceras fischeri*
Gomphoceras floydense Fenton and Fenton = *Acleistoceras?* *floydense*
Gomphoceras fusiforme Whitfield = *Acleistoceras?* *clelandi*
Gomphoceras fusiforme whitfieldi Cleland = *Acleistoceras?* *clelandi*
Gomphoceras gomphus Hall = *Acleistoceras?* *gomphus*
Gomphoceras grandtowerensis Branson and Williams = *Acleistoceras grandtowerense*
Gomphoceras hyatti Whitfield = *Acleistoceras hyatti*
Gomphoceras illaenus Hall = *Acleistoceras?* *illaenus*
Gomphoceras impar Hall = *Acleistoceras impar*
Gomphoceras (*Poterioceras*) *impar* Hall = *Acleistoceras impar*
Gomphoceras lunatum Hall = *Cyrtogomphus lunatus*
Gomphoceras manes Hall = *Brevicoceras?* *manes*
Gomphoceras manitobense Whiteaves = *Poteriocerina manitobensis*
Gomphoceras minimum Hall = *Ovoceras?* *minimum*
Gomphoceras missouriense Branson and Williams = *Exocyrtoceras?* *missouriense*
Gomphoceras mitra Hall = *Acleistoceras mitra*
Gomphoceras mitriforme Clarke = *Brevicoceras?* *mitriforme*
Gomphoceras numa (Billings) = *Nephriticeras?* *numa*
Gomphoceras omicron Winchell = *Acleistoceras?* *omicron*
Gomphoceras oviforme (Hall) = *Ovoceras oviforme*, *O. constrictum*, and *Micronoceras gibbosum*
Gomphoceras (*Apioceras*) *oviforme* Hall = *Ovoceras oviforme*
Gomphoceras pingue Hall = *Cyrtogomphus?* *pinguis*
Gomphoceras? *planum* Hall = *Brevicoceras planum*
Gomphoceras plenum Hall = *Acleistoceras plenum*
Gomphoceras poculum Hall = *Micronoceras?* *poculum*
Gomphoceras raphanus Hall = *Micronoceras raphanus* and *Brevicoceras wellsii*
Gomphoceras (*Poterioceras*) *raphanus* Hall = *Micronoceras raphanus*
Gomphoceras rude Hall = *Brevicoceras rude*
Gomphoceras sacculum Meek and Worthen = *Acleistoceras?* *sacculum*
Gomphoceras sciotense Whitfield = *Acleistoceras?* *sciotense*
Gomphoceras solidum Hall = *Poteriocerina solida*
Gomphoceras striatum Rowley = *Acleistoceras?* *striatum*
Gomphoceras suboviforme Walcott = *Acleistoceras?* *suboviforme*
Gomphoceras transversum (Hall) = *Tetranodoceras transversum*
Gomphoceras tumidum Hall = *Anglicornus?* *tumidum*
Gomphoceras turbiniforme Meek and Worthen = *Ovoceras turbiniforme*

- Gomphoceras (Apioceras) turbiniforme** Meek and Worthen = **Ovoceras turbiniforme**
Gomphoceras whitfieldi Cleland = **Acleistoceras whitfieldi**
Gomphoceras wisconsinense Cleland = **Acleistoceras? wisconsinense**
Goniatites amplexus Hall = **Manticoceras? amplexum**
Goniatites astarte Clarke = **Tornoceras (Tornoceras) uniangulare**
Goniatites bicostatus Hall = **Tornoceras (Aulatornoceras) bicostatum** and **Tornoceras (Tornoceras) uniangulare**
Goniatites (Tornoceras) bicostatus Hall = **Tornoceras (Aulatornoceras) bicostatum**
Goniatites chemungensis Vanuxem = **Schindewolfoceras chemungense** and **Sandbergeroceras? syngonum**
Goniatites Chemungensis equicostatus Hall = **Schindewolfoceras? equicostatum**
Goniatites complanatus (Hall) =? **Probeloceras lutheri**
Goniatites (Clymenia?) complanatus (Hall) =? **Probeloceras lutheri**
Goniatites complanatus perlatus Hall = **Manticoceras perlatum**
Goniatites delphiensis Kindle = **Manticoceras delphiense** and **M. kindlei**
Goniatites desideratus Walcott = **Agoniatites? desideratus**
Goniatites discoideus Hall = **Tornoceras (Parodoceras) discoideum** and **Tornoceras (Tornoceras) uniangulare**
Goniatites (Parodoceras) discoideus Hall = **Tornoceras (Parodoceras) discoideum**
Goniatites discoideus ohioensis Hall and Whitfield = **Tornoceras (Tornoceras?) whitfieldi**
Goniatites erato (Hall) =? **Probeloceras lutheri**
Goniatites evexus (von Buch) [part] = **Agoniatites vanuxemi**
Goniatites expansus Vanuxem = **Agoniatites vanuxemi** and **Centroceras marcellense**
Goniatites (Agoniatites) expansus (Vanuxem) = **Agoniatites vanuxemi**
Goniatites holzapfeli (Clarke) = **Manticoceras holzapfeli**
Goniatites (Gephyroceras) holzapfeli (Clarke) = **Manticoceras holzapfeli**
Goniatites interruptus Rogers [not de Koninck] =? **Manticoceras sinuosum**
Goniatites intumescens (Beyrich) [part] = **Manticoceras sinuosum**
Goniatites (Manticoceras) intumescens (Beyrich) [part] = **Manticoceras sinuosum**
Goniatites lutheri Clarke = **Probeloceras lutheri**
Goniatites (Probeloceras) lutheri (Clarke) = **Probeloceras lutheri**
Goniatites marcellensis Vanuxem = **Centroceras marcellense**
Goniatites [Agoniatites] marcellensis Vanuxem = **Centroceras marcellense**
Goniatites mithrax Hall = **Tornoceras (Tornoceras) mithrax**
Goniatites nodifer Clarke = **Manticoceras nodifer**
Goniatites (Clymenia?) Nundaia Hall = **Manticoceras sinuosum**
Goniatites orbicella Hall = **Tornoceras? (Tornoceras?) orbicella**
Goniatites patersoni ["pattersoni"] Hall = **Manticoceras sinuosum**
Goniatites peracutus Hall = **Tornoceras (Tornoceras) peracutum**
Goniatites plebeiformis Hall = **Werneroceras plebeiforme**
Goniatites punctuatus Conrad = **Agoniatites punctatus**
Goniatites rhynchostoma (Clarke) = **Manticoceras rhynchostoma**
Goniatites (Manticoceras) rhynchostoma (Clarke) = **Manticoceras rhynchostoma**
Goniatites simulator Hall = **Manticoceras simulator**
Goniatites sinuosus Hall = **Manticoceras sinuosum** and **Tornoceras (Parodoceras) discoideum**
Goniatites sororium (Clarke) = **Manticoceras sororium**
Goniatites (Manticoceras) sororium (Clarke) = **Manticoceras sororium**
Goniatites subnautilus (Schlotheim) [part] = **Agoniatites vanuxemi**
Goniatites uniangularis Conrad = **Tornoceras (Tornoceras) uniangulare**

- Goniatites* (*Tornoceras*) *uniangularis* Conrad = *Tornoceras* (*Tornoceras*) *uniangularis*
Goniatites (*Tornoceras*) *uniangularis compressum* Clarke = *Tornoceras* (*Tornoceras*) *uniangularis*
Goniatites (*Tornoceras*) *uniangularis obesum* Clarke = *Tornoceras* (*Tornoceras*) *uniangularis*
Goniatites unilobatus Hall = *Agoniatites unilobatus*
Goniatites vanuxemi (Hall) = *Agoniatites vanuxemi*
Goniatites vanuxemi nodiferus Hall = *Agoniatites nodiferus*
Goniatites wabashensis Kindle = *Werneroceras wabashense*
Gyroceras canadense Whiteaves = *Cophinoceras canadense*
Gyroceras clarkei Cleland = *Rhadinoceras clarkei*
Gyroceras columbiense Whitfield = *Ryticeras?* *columbiense*
Gyroceras? *constrictum* Meek and Worthen = *Tetranodoceras constrictum*
Gyroceras cornutum Owen = *Naedyceras cornutum*
Gyroceras cyclops Hall = *Ryticeras cyclops*
Gyroceras (*Ryticeras*) *cyclops* Hall = *Ryticeras cyclops*
Gyroceras eryx Hall = *Rhadinoceras eryx* and *R. clarkei*
Gyroceras expansum Saemann = *Nephriticeras bucinum*
Gyroceras filicinctorum Whiteaves = *Cophinoceras filicinctorum*
Gyroceras? *haanii* (Troost) = *Polycronites haanii*
Gyroceras inelegans Meek = *Gigantoceras inelegans*
Gyroceras (*Gigantoceras*) *inelegans* Meek = *Gigantoceras inelegans*
Gyroceras (*Nautilus?*) *inelegans* Meek = *Gigantoceras inelegans*
Gyroceras indianense Kindle = *Centroceras?* *indianense*
Gyroceras jason (Hall) = *Ryticeras jason*
Gyroceras lacinosum Hall = *Halloceras lacinosum*
Gyroceras liratum Hall = *Lyrioceras liratum*, *L. subliratum*, and *Nephriticerina juvenis*
Gyroceras logani Meek = *Halloceras logani*
Gyroceras matheri (Conrad) = *Halloceras matheri*
Gyroceras (*Halloceras*) *matheri* (Conrad) = *Halloceras matheri*
Gyroceras nereus Hall = *Zitteloceras nereus*
Gyroceras (*Zitteloceras*) *nereus* Hall = *Zitteloceras nereus*
Gyroceras Numa Billings = *Nephriticeras?* *numa*
Gyroceras ohioense Meek = *Centroceras ohioense*
Gyroceras (*Centroceras*) *ohioense* Meek = *Centroceras ohioense*
Gyroceras (*Trochoceras?*) *Ohioense* Meek = *Centroceras ohioense*
Gyroceras ornatum (Goldfuss) [Stauffer] = *Cophinoceras ornatum?*
Gyroceras paucinodum Hall = *Halloceras paucinodum*
Gyroceras (*Halloceras*) *paucinodus* Hall = *Halloceras paucinodum*
Gyroceras (*Hercoceras?*) *paucinodus* Hall = *Halloceras paucinodum*
Gyroceras pratti Barris = *Centroceras pratti*
Gyroceras seminodosum Whitfield = *Nassauoceras seminodosum*
Gyroceras spinosum (Conrad) = *Cophinoceras spinosum*
Gyroceras (*Cophinoceras*) *spinosum* (Conrad) = *Cophinoceras spinosum*
Gyroceras (*Cyrtoceras?*) *spinosum* (Conrad) = *Cophinoceras spinosum*
Gyroceras subliratum Hall = *Lyrioceras subliratum*
Gyroceras submamillatum Whiteaves = *Tetranodoceras submamillatum*
Gyroceras transversum (Hall) = *Tetranodoceras transversum*
Gyroceras trivolvus (Conrad) = *Ryticeras trivolve*

- Gyroceras (Zitteloceras) trivolve** (Conrad) = **Ryticeras trivolve**
Gyroceras undulatum (Vanuxem) = **Halloceras undulatum**
Gyroceras (Halloceras) undulatum (Vanuxem) = **Halloceras undulatum**
Gyroceras validum Hall = **Rhadinoceras validum**
Gyroceratites inelegans (Meek) = **Gigantoceras inelegans**
Gyroceratites (Nautilus?) inelegans (Meek) = **Gigantoceras inelegans**
Gyroceratites ohioensis (Meek) = **Centroceras ohioense**
Gyroceratites (Trochoceras?) ohioensis (Meek) = **Centroceras ohioense**

HALLOCERAS Hyatt (Halloceratidae)

GENOTYPE: *Cyrtoceras undulatum* Vanuxem

Halloceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 284—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 376—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 53—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 518; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 522—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 76-77—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 527.

Halloceras lacinosum (Hall)

Gyroceras lacinosum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 376-377, pl. 52A, fig. 8; N. Y. Assembly Doc. 105 (1886) pl. (124) 9, figs. 5, 6—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 36, pl. 124, figs. 5, 6—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 596—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42.

Onondaga: New York.

Halloceras logani (Meek)

Gyroceras Logani MEEK, Chicago Acad. Sci., Tr., vol. 1 (1867) p. 110-111, pl. 15, figs. 2a-2c.

Devonian: Mackenzie River district, Canada.

Halloceras matheri (Conrad)

Cyrtoceras Matheri CONRAD, N. Y. Geol. Survey, Ann. Rept. 4 (1840) p. 206.

Gyroceras matheri HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 38; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 66; N. Y. State Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 55, figs. 5, 6, pl. 56, fig. 3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 377-378, pl. 55, figs. 1-6—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 203, 328, text fig. 142.

Gyroceras (Halloceras) matheri CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 596.

Ryticeras matheri GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 81, text fig. 1299.

Onondaga: New York.

Halloceras paucinodum (Hall)

Gyroceras (Herococeras?) paucinodus HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 55, figs. 1-4.

Gyroceras paucinodum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 380-381, pl. 54, figs. 1-4—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 204, 328, text fig. 144.

Gyroceras (Halloceras) paucinodus CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 597.

Halloceras paucinodum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 77, text fig. 1294.

Onondaga: Cherry Valley and Schoharie, N. Y.

Halloceras undulatum (Vanuxem)

Cyrtoceras undulatus VANUXEM, Geol. N. Y., Survey third geol. district (1842) p. 139, 140, text fig. 33 (2). [Not *Cyrtoceras undulatus* Hall, 1876.]

Gyroceras undulatum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 38; N. Y. State Cab., Nat. Hist., Ann. Rept. 15 (1862) p. 66; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 56, figs. 1, 2; Pal. N. Y., vol. 5, pt. 2 (1879) p. 378-380, pl. 53, figs. 1-6, pl. 54, fig. 5—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 441, text fig. 743—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 203, 328, text fig. 143—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 11.

Halloceras undulatum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 284—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 77, text fig. 1293.

Cyrtoceras (*Gyroceras*?) *undulatum* LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 181, text fig., and Errata for vol. 1, p. xviii.

Gyroceras (*Halloceras*) *undulatum* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 600-601.

Onondaga: New York and Pennsylvania.

Hercoceras auriculum Parks = **Tyrrelloceras?** *auriculum**HERKIMEROCERAS* Foerste (Poterioceratidae)

GENOTYPE: *Cyrtoceras subrectum* Hall

Herkimeroceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 288, 289, 327-328, pl. 51, figs. 2A-2C.

Herkimeroceras subrectum (Hall)

Cyrtoceras subrectum HALL, Pal. N. Y., vol. 3 (1859) p. 342-343, pl. 69, figs. 3a-3d.

Herkimeroceras subrectum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 288, 327-328, pl. 51, figs. 2A-2C—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 68.

Keyser: Herkimer Co., N. Y.; and probably the Manlius of Schoharie Valley, N. Y.

HOMALOCERAS Whiteaves (Rhadinoceratidae)

GENOTYPE: *Homaloceras planatum* Whiteaves

Homaloceras WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 104—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 520; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 601—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 525.

Homaloceras planatum Whiteaves

Homaloceras planatum WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 104-105, pl. 8, fig. 1-1d; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 345.

Winnipegosis?: Dawson Bay, Lake Winnipegosis, Manitoba.

JOVELLANIA Bayle [part] = *TRIPLEUROCERAS**KIONOCERAS* Hyatt (Kionoceratidae)

GENOTYPE: *Orthoceras doricum* Barrande

Kionoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 275—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 396—NEWELL, Boston Soc. Nat. Hist., Pr., vol. 23 (1888) p. 469—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 519—CLARKE and RUEDEMANN, N. Y. State Mus., Mem. 5 (1903) p. 82—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910)

p. 61—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 600—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 1, p. 681—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 521—FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 4; Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 285-286.

Kionoceras champlaini Clarke

Kionoceras champlaini CLARKE, N. Y. State Mus., Bull. 107 (1907) p. 177, text fig.; N. Y. State Mus., Mem. 9, pt. 1 (1908) p. 43, 142, pl. 13, fig. 8.

Grand Grève: Indian Cove, Quebec.

Kionoceras creon (Hall)

Orthoceras creon HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 260, pl. 79, figs. 14, 15—FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 5.

Orthoceras (Spyroceras) creon CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 622.

Orthoceras erion GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327. [Obviously a misprint and was intended to read *Orthoceras creon*.]

Schoharie: Schoharie and Albany counties, N. Y.

Kionoceras darwini (Billings) [Bassler] = **Kionoceras** cf. **K. myrice**

Kionoceras dyeri Foerste

Kionoceras dyeri FOERSTE, Ontario Dept. Mines, Ann. Rept. 37, pt. 6, appd. (1929) p. 71-72, pl. 1, fig. 5.

Abitibi River: West branch French River, Ontario.

Kionoceras cf. **K. myrice** (Hall and Whitfield)

Orthoceras darwini [part] FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 76-78, text fig. 8. [Not *Cyrtoceras myrice* Hall and Whitfield, 1875.]

Kionoceras darwini [part] BASSLER, U. S. Nat. Mus., Bull. 92 (1915) p. 682.

Kionoceras cf. *K. myrice* FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 37-39, pl. 10, fig. 3; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Offley Island, Arctic America.

Kionoceras oedipus (Hall)

Orthoceras oedipus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 294-295, pl. 37, fig. 6, pl. 82, fig. 17—CLARKE, N. Y. State Geol., Ann. Rept. 13 (1894) p. 171, pl. 2, fig. 12—FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 5.

Orthoceras (Spyroceras) oedipus CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 633-634.

Orthoceras aedipus LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 11. [Obviously a misprint and was intended to read *Orthoceras oedipus*.]

Hamilton: New York.

Kionoceras profundum (Hall)

Orthoceras profundum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 48; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 76, pl. 7, fig. 8; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 37, figs. 3-6; Pal. N. Y., vol. 5, pt. 2 (1879) p. 271, pl. 37, figs. 7-9—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 556, text fig.—CLARKE, N. Y. State Geol., Ann. Rept. 13 (1894) p. 170—CLARKE and LUTHER, N. Y. State Mus., Bull. 63

(1904) p. 42—FOERSTE, Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 5.

Orthoceras (Spyroceras) profundum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 638.

Onondaga: western New York; and possibly the Columbus at Columbus, Ohio.

KOENENITES Wedekind (Manticoceratidae)

GENOTYPE: *Goniatites lamellosus* Sandberger and Sandberger

Koenenites WEDEKIND, Ges. naturf. Freunde Berlin, Sitz., Jahrg. 1913 (1913) p. 47; Palaeontographica, Bd. 62 (1918) p. 126—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 550—MATERN, Preuss. geol. Landes., Abh., N. F., Heft 134 (1931) p. 73—SCHINDEWOLF, Deutsch. geol. Ges., Zeitschr., Bd. 88 (1937) p. 691—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 125-126.

Koenenites cooperi Miller

Koenenites cooperi MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 126-130, text figs. 25, 26, pl. 27, figs. 8-11, pl. 28, figs. 1-5.

Basal Antrim: near Alpena, Mich.

KOPHINOCERAS Hyatt = *COPHINOCERAS*

LOBOBACTRITES Schindewolf (Bactritidae)

GENOTYPE: *Bactrites ellipticus* Frech

Lobobactrites SCHINDEWOLF, Pal. Zeitschr., Bd. 14 (1932) p. 174; Preuss. geol. Landes., Abh., N. F., Heft 148 (1933) p. 73—SPATH, Biol. Rev., vol. 8 (1933) p. 445-450—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 39-40.

Lobobactrites clavus (Hall)

Bactrites clavus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 316-317, pl. 84, fig. 15, pl. 113, figs. 1-5—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 9—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 577—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 46—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 134, text fig. 1386—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 12—WILLARD, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 148; Pa. Geol. Survey, 4th ser., Bull. G4 (1932) p. 36, 40—GOLDRING, N. Y. State Mus., Bull. 303 (1935) p. 158, text fig. 57L—FLOWER, Bull. Am. Pal., vol. 22 (1936) p. 280, 284.

Lobobactrites clavus SCHINDEWOLF, Preuss. geol. Landes., Abh., N. F. Heft 148 (1933) p. 73—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 7 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 40-41, pl. 3, figs. 1-7.

Marcellus and Hamilton: New York and Pennsylvania.

Loxoceras bebryx (Hall) = *Ormoceras bebryx*

Loxoceras? consortale (Hall) = *Bradfordoceras consortale*

Loxoceras? expositum (Hall) = *Ormoceras expositum*

Loxoceras luxum (Hall) = *Ormoceras luxum*

LYRIO CERAS Foerste (Rhadinoceratidae)

GENOTYPE: *Nautilus liratus* Hall

Lyrioceras FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 193-194—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 51.

Lyrioceras dubium Miller

Aploceras (Cyrtoceras) liratum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 44; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 72, pl. 8, fig. 9.

Cyrtoceras liratum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 364-365, pl. 95, fig. 1—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 531—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 124.

Lyrioceras [*Aploceras* (*Cyrtoceras*)] *liratum* MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 331.

Lyrioceras dubium MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 331—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 51.

Cherry Valley member of Marcellus: Manlius, N. Y.

Lyrioceras hindshawi (Ehlers and Hussey)

Nephriticeras hindshawi EHLERS and HUSSEY, Mich. Acad. Sci., Arts, and Letters, Pap., vol. 1 (1923) p. 249-251, pl. 37, fig. 4, pl. 38, fig. 1.

Lyrioceras hindshawi FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 198.

Long Lake member of Traverse: Hawks Post Office, Presque Isle Co., Mich.

Lyrioceras liratum (Hall)

Gyroceras liratum HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 104; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 58, fig. 1 [not 2], pl. 60, figs. 8, 9 [not pl. 57, figs. 5, 6]—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 48, 51, 54.

Nautilus liratus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 407-408, pl. 57, fig. 3, pl. 60, figs. 8, 9—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125, 131—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 19.

Nephriticeras liratum HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 532—WHIT-EAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 408, 417—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 85—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 236.

Nautilus (*Nephriticeras*) *liratus* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 613-614.

Lyrioceras liratum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 193-194—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 51.

Hamilton and Marcellus: New York; and possibly the Hamilton of Pennsylvania and Ontario.

Lyrioceras subliratum (Hall)

Gyroceras subliratum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 58, figs. 3, 4.

Gyroceras liratum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 58, fig. 2 [not 1; and not pl. 57, figs. 5, 6, nor pl. 60, figs. 8, 9.]

Nautilus? HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 58, fig. 5.

Nautilus subliratus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 409-410, pl. 57, figs. 4-7.

Nephriticeras subliratum HYATT, Am. Phil. Soc., Pr., vol. 32 (1893) p. 532-533.

Nautilus (*Nephriticeras*) *subliratus* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 616

Lyrioceras subliratum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 193.

Hamilton: Earlville and Basin Gulf, N. Y.

Maeneceras amplexum (Hall) = *Manticoceras?* *amplexum*

MANTICOCERAS Hyatt (Manticoceratidae)

GENOTYPE: *Goniatites simulator* Hall

Manticoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 317-318—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 418—GÜRICH, Russ.-kais. Min. Ges. St. Petersburg, Verh., 2d ser., Bd. 32 (1896) p. 334—CLARKE, N. Y. State Mus., Ann. Rept. 50, vol. 2 (1899) p. 42-45, 79-80 [also issued as N. Y. State Geol., Ann. Rept. 16]—HOLZAPFEL, Mém. Com. Géol., vol. 12, no. 3 (1899) p. 21—

GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 299—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 550—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 56—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 126—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 136—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 22—WEDEKIND, Ges. naturf. Freunde Berlin, Sitz., Jahrg. 1913 (1913) p. 46; Palaeontographica, Bd. 62 (1918) p. 123-126—SHANNON, Devon Assoc., Tr., vol. 53 (1921) p. 251—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 306—BROILLI, Zittel-Broilli Grundz. Pal., Abt. 1, ed. 6 (1924) p. 550, text fig. 1154—MATERN, Senckenbergiana, Bd. 11 (1929) p. 151—RUEDEMANN and GOLDRING, N. Y. State Mus., Bull. 288 (1931) p. 79, text fig. 14—MATERN, Preuss. geol. Landes., Abh., N. F., Heft 134 (1931) p. 54—SCHINDEWOLF, Preuss. geol. Landes., Jahrb., Bd. 58 (1937) p. 249, 250—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 72-74.

Gephuroceras ["*Gephyroceras*"] HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 316-317—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 418—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 414—GÜRICH, Russ.-kais. Min. Ges. St. Petersburg, Verh., 2d ser., Bd. 32 (1896) p. 335—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 59, 287—CLARKE, N. Y. State Mus., Ann. Rept. 50, vol. 2 (1899) p. 44, 45, 85 [also issued as N. Y. State Geol., Ann. Rept. 16]—HOLZAPFEL, Mém. Com. Géol., vol. 12, no. 3 (1899) p. 27-28—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 550, text fig. 1125—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 56—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631, text figs. 1138, 1179—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 21—WEDEKIND, Ges. naturf. Freunde Berlin, Sitz., Jahrg. 1913 (1913) p. 46; Palaeontographica, Bd. 62 (1918) p. 121, 166—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 307—BROILLI, Zittel-Broilli Grundz. Pal., Abt. 1, ed. 6 (1924) p. 550—MATERN, Senckenbergiana, Bd. 11 (1929) p. 151. [*Goniatites sinuosus* HALL is genotype of *Gephuroceras*.]

Manticoceras accelerans Clarke

Manticoceras accelerans CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [*nomen nudum*]; N. Y. State Geol., Ann. Rept. 16 (1899) p. 77, 82, text figs. 60, 63, 64, pl. 6, fig. 10 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 602—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 16 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 74, text fig. 12, pl. 13, fig. 8.

Gephyroceras accelerans CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Cashaqua shale member of Naples: Naples, N. Y.

Manticoceras? amplexum (Hall)

Goniatites amplexus HALL, N. Y. Assembly Doc. 105 (1886) pl. (127) 12, fig. 1—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39-40, pl. 127, fig. 1—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Maeneceras amplexum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 602—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 309.

Manticoceras? amplexum FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 23—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 17 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 74-76, pl. 13, figs. 15-19.

Tully: New York.

Manticoceras apprimatum Clarke

Manticoceras apprimatum CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 62-63, 80, text figs. 63, 64, pl. 6, figs. 27-29 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 603—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus.,

Mem. 6 (1904) p. 358, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—SCHMIDT, Pal. Zeitschr., Bd. 7 (1926) p. 201—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 18 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 76-77, pl. 13, figs. 9-11.

Gephyroceras apprimatum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Genesee and Naples: New York.

Manticoceras cataphractum (Clarke)

Gephyroceras cataphractum CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 87-89, text figs. 66, 67, pl. 6, figs. 3-9 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 588—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 361.

Manticoceras cataphractum FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 320—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 19 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 77-80, text figs. 13, 14, pl. 13, figs. 1-7.

Hanover shale member of Chemung formation: near Java, N. Y.

Manticoceras clarkei Miller

Gephyroceras cf. *G. domanicense* CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 345, 357, 361, 366, 368, 380, text fig. 15; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 345, 357, 361, 366, 368, 380, text fig. 15—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 41, 91—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 324. [Not *Gephyroceras domanicense* HOLZAPFEL, 1899.]

Manticoceras clarkei MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 80-81, pl. 14, figs. 15-17.

Gowanda member of Canadaway: western New York.

Manticoceras contractum Clarke

Manticoceras Patersoni contractum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [nomen nudum]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [nomen nudum].

Manticoceras contractum CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 69-70, 81, text figs. 44, 63, 64, pl. 6, figs. 1, 2 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 603, 809—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 20; Geol. Soc. Am., Spec. Pap. 14 (1938) p. 81-82, pl. 13, figs. 12-14.

Gephyroceras contractum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 311.

Genundewa limestone member of Genesee: near Canandaigua Lake, N. Y.

Manticoceras cordiforme Miller

Manticoceras cordiforme MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 82-83, pl. 21, figs. 2-4.

Carcajou Mountain sandstone: Mackenzie River Valley, Canada.

Manticoceras delphiense (Kindle)

Goniatites delphiensis [part] KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1901) p. 563, 577-578, pl. 2, figs. 1, 1a [not 2, 3].

Gephyroceras? delphiense [part] CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 374; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 374.

Manticoceras delphiense MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 21 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 83-85, pl. 14, figs. 1-3.

Lower part of New Albany shale: near Delphi, Indiana.

Manticoceras fasciculatum Clarke

Manticoceras fasciculatum CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 71-74, 81-82, text figs. 45-53, 63, 64, pl. 6, figs. 13-22 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 603-604—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—SCHMIDT, Pal. Zeitschr., Bd. 7 (1926) p. 201—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 22 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 85-87, text fig. 15, pl. 15, figs. 1-10.

Gephyroceras fasciculatum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 311.

Genundewa limestone member of Genesee: central New York.

Manticoceras genundewa (Clarke)

Gephyroceras Genundewah CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [nomen nudum]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [nomen nudum].

(?) *Gephyroceras ceryceum* CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [nomen nudum]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [nomen nudum].

Gephyroceras? (Probeloceras?) genundewa CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 86, pl. 8, figs. 1-3 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 588-589—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361, 370; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361, 370.

Gephyroceras genundewa CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 23.

Manticoceras genundewa FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 311—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 23 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 88-89, pl. 20, figs. 1-4.

Manticoceras? (Probeloceras?) genundewa CHADWICK, Geol. Soc. Am., Proc. for 1933 (1934) p. 350.

Genundewa limestone member of Genesee: New York.

Manticoceras holzapfeli (Clarke)

Gephyroceras holzapfeli CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 87, text fig. 65, pl. 7, fig. 17 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 589—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 357, 361, 380; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 357, 361, 380—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 41—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 315.

Gephyroceras? (Probeloceras?) Holzapfeli CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 157 [also issued as N. Y. State Mus., Ann. Rept. 50].

Goniatites (Gephyroceras) holzapfeli GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 302-303, text fig. 241.

Manticoceras holzapfeli FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 24 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 89-91, text fig. 16, pl. 30, fig. 18.

Goniatites holzapfeli HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Cashaqua shale member of Naples: Eighteen-mile Creek, N. Y.

Manticoceras intumescens (Beyrich) [part] = **Manticoceras regulare**, **M. simulator**, and **M. sinuosum**

Manticoceras kindlei Miller

Goniatites delphiensis [part] KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1901) p. 563, 577-578, pl. 2, figs. 2, 3 [not 1, 1a].

Gephyroceras? delphiense [part] CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 374; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 374.

Manticoceras kindlei MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 91-92, pl. 14, figs. 8-11.

Lower part of New Albany shale: near Delphi, Ind.

Manticoceras nodifer (Clarke)

Goniatites nodifer CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 21.

Manticoceras nodifer CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53; N. Y. State Geol., Ann. Rept. 16 (1899) p. 74-75, 82, text fig. 54, 63, 64, pl. 6, figs. 24-26 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 604—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea, 25 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 92-93, pl. 15, figs. 15-18.

Manticoceras nodiferum FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24.

Gephyroceras nodifer CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 311.

Genundewa limestone member of Genesee: Genundewa, N. Y.

Manticoceras nodiferum Clarke [Frech] = **Manticoceras nodifer**

Manticoceras oxy Clarke

Manticoceras oxy CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [*nomen nudum*]; N. Y. State Geol., Ann. Rept. 16 (1899) p. 77-78, 82, text figs. 61, 63, 64, pl. 2, figs. 5, 6, pl. 3, figs. 1-3, 4? [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 605, 810—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 63—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 368; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 368—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 22, 23—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 27, 28, 29—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 26 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 93-96, text fig. 17, pl. 16, fig. 1, pl. 17, fig. 1, pl. 18, figs. 1-3.

Gephyroceras oxy CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 320.

Chemung: New York.

Manticoceras patersoni ["pattersoni"] (Hall) = **Manticoceras regulare** and **M. sinuosum**

Manticoceras Patersoni contractum Clarke = **Manticoceras contractum**

Manticoceras patersoni ["pattersoni"] **styliophilum** Clarke = **Manticoceras styliophilum**

Manticoceras perlatum (Hall)

Goniatites complanatus perlatus HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 1-2; N. Y. State Mus., Ann. Rept. 27 (1875) p. 132-133; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 70, fig. 12; Pal. N. Y., vol. 5, pt. 2 (1879) p. 458-459, pl. 70, fig. 12—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 50.

Gephyroceras perlatum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53; N. Y. State Geol., Ann. Rept. 16 (1899) p. 85-86 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 589, 809; CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 361.

Gephyroceras (Manticoceras) perlatum FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24.

Manticoceras perlatum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 312, 317—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 27 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 95-97, pl. 24, figs. 11, 12.

Sherburne member of Genesee: New York; and possibly the Ithaca member of the Naples of New York.

Manticoceras regulare Fenton and Fenton

Goniatites sp. CALVIN, Iowa Geol. Survey, vol. 7 (1897) p. 168.

Manticoceras intumescens CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 137, 138 [also issued as N. Y. State Mus., Ann. Rept. 50]; N. Y. State Mus., Mem. 6 (1904) p. 356; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 356.

Manticoceras pattersoni FENTON, Am. Jour. Sci., 4th ser., vol. 48 (1919) p. 373.

Manticoceras regulare FENTON and FENTON, Univ. Mich., Mus. Geol., Contr., vol. 1 (1924) p. 196-197, pl. 39, figs. 1-3—MILLER, Pan-Am. Geol., vol. 65 (1936) p. 336-337; Iowa Acad. Sci., Pr., vol. 43 (1938) p. 231, 234, pl. 1, figs. 1-4, 11?, 12?; Type invertebrate fossils of North America (Devonian), Ammonoidea 28 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 97-99, pl. 21, fig. 1, pl. 22, figs. 1-6.

Lime Creek: Iowa.

Manticoceras rhynchostoma Clarke

Manticoceras rhynchostoma CLARKE, N. Y. State Mus., Ann. Rept. 16 (1899) p. 65-69, 81, text figs. 30-43, 63, 64, pl. 4, figs. 6-13, pl. 5, fig. 1 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 609-610; CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 356, 357, 361, 365, 366, 367, 378, 379; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 356, 357, 361, 365, 366, 367, 378, 379—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 136, text figs. 1390b, 1390d—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 27, 28, 29—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 29 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 99-102, text fig. 18, pl. 14, fig. 19, pl. 25, figs. 1-8, pl. 26, figs. 1, 2.

Goniatites (Manticoceras) rhynchostoma GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 301, text fig. 237, 238.

Goniatites rhynchostoma HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Gephyroceras rhynchostoma CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 322, 325.

Chemung and Canadaway: western New York.

Manticoceras septentrionale Miller

Manticoceras septentrionale MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 102-104, text fig. 19, pl. 23, figs. 1, 2.

Carcajou Mountain: Mackenzie River Valley, Canada.

Manticoceras simulator (Hall)

Goniatites simulator HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 2-3; N. Y. State Mus., Ann. Rept. 27 (1875) p. 133-134; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 69, figs. 1, 2, pl. 74, fig. 8; Pal. N. Y., vol. 5, pt. 2 (1879) p. 453-455, pl. 69, figs. 1, 2, pl. 74, fig. 8.

Manticoceras simulator HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 318—CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53; N. Y. State Geol., Ann. Rept. 16 (1899) p. 64-65, 81, text figs. 29, 63, 64, pl. 1, fig. 14 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 610-611; CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 361, 368; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 361, 368—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am. Bull., vol. 46 (1935) p. 312-317—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 30 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 104-105, text fig. 11B, pl. 24, figs. 8-10.

Manticoceras intumescens [part] SCHINDEWOLF, Pal. Zentralblatt, Bd. 6 (1935) p. 281.

Naples: Ithaca, N. Y.; and possibly the Genesee of New York.

Manticoceras sinuosum (Hall)

Goniatites sinuosus HALL, Geol. N. Y., pt. IV, comprising the survey of the fourth geological district (1843) p. 244, 246, text figs. 106 (6), 107 (9) [part]—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 16, fig. 10—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 72, fig. 11; Pal. N. Y., vol. 5, pt. 2 (1879) p. 460-463, pl. 70, figs. 13-15, pl. 72, fig. 11, pl. 74, fig. 11—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 49—HALL, N. Y. State Geol., Ann. Rept. 5 (1886) pl. 128 (13), figs. 1, 2—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 40, pl. 128, figs. 1, 2—MILLER, North American geology and palaeontology for the use of amateurs, students and scientists (1889) p. 440—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 257, text figs.—CLARKE, Neues Jahrb. f. Min., Geol. und Pal., Jahrg. 1891, Bd. 1 (1891) p. 166; Am. Geol., vol. 8 (1891) p. 94—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331.

(?) *Goniatites interruptus*? ROGERS, Geol. Pa., vol. 2, pt. 2 (1858) p. 829, text fig. 676—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 256, text fig. [Not *Goniatites interruptus* de Koninck, 1843.]

Goniatites patersoni ["*pattersoni*"] HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 99, text figs. 9, 10; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 196; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 136; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 72, figs. 1-5, pl. 74, fig. 15; Pal. N. Y., vol. 5, pt. 2 (1879) p. 464-467, pl. 72, figs. 1-5, pl. 74, fig. 15—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 21, 48-49—HALL, N. Y. Geol. Survey, Ann. Rept. 5 (1886) pl. 127 (12), figs. 8, 9—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 40, pl. 127, figs. 8, 9—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 440—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331.

Goniatites (Clymenia?) Nundaia HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 3; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 134-135; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 70, figs. 13-15.

Gephuroceras sinuosum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 317.

Manticoceras patersoni ["*pattersoni*"] HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 318—CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53, 58, 75, 76, 77, 78, 79, 80, 81; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53, 58, 75, 76, 77, 78, 79, 80, 81; N. Y. State Geol., Ann. Rept. 16 (1889) p. 42, 45-62, 80, 101, text figs. 1-28, 63, 64, pl. 1, figs. 1-12, pl. 2, figs. 1-4, 6, pl. 4, figs. 14-18 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 605-609—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61, 62—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 360, 365, 367, 378, 379; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 360, 365, 367, 378, 379—WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 6, 8—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 27, 31; N. Y. State Mus., Bull. 137 (1910) p. 28, 30; N. Y. State Mus., Bull. 152 (1911) p. 21—PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 432, 444, 509—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 693-695, pl. 72, figs. 1-3—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 23-24—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 23, 25, 27, 28—SCHMIDT, Pal. Zeitschr., Bd. 7 (1926) p. 201—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 104-106, pl. 21, figs. 2A-2E.

Goniatites intumescens CLARKE, Neues Jahrb. f. Min., Geol. und Pal., Jahrg. 1891,

Bd. 1 (1891) p. 166; Am. Geol., vol. 8 (1891) p. 93-94; Am. Jour. Sci., 3d ser., vol. 43 (1893) p. 57; Am. Geol., vol. 12 (1893) p. 113—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Goniatites sp. WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 3, no. 5 (1891) p. 245, pl. 31, fig. 5.

Goniatites (Manticoceras) intumescens GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 299, text fig. 235.

Manticoceras intumescens CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 138-139 [also issued as N. Y. State Mus., Ann. Rept. 50]; N. Y. State Mus., Mem. 6 (1904) p. 356; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 356—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 136, text figs. 1389a, 1389b, 1390a—SCHINDEWOLF, Pal. Zentralblatt, Bd. 6 (1935) p. 281 [part].

Gephyroceras pattersoni CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 312, 318, 322, 325.

Manticoceras sinuosum MILLER, Type invertebrate fossils of North America (Devonian) Ammonoidea 31 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 106-117, text figs. 11c, 20-22, pl. 18, fig. 4, pl. 19, figs. 1-9, pl. 20, figs. 6-10, pl. 22, figs. 10-13, pl. 27, figs. 6, 7, pl. 33, fig. 2.

Genesee, Naples, Chemung, and Canadaway: western New York; and possibly the Jennings of Virginia, the Abitibi River limestone south of James Bay, and the Hay River limestone on Hay River about 40 miles from Great Slave Lake in northwestern Canada.

Manticoceras sororium Clarke

Manticoceras sororium CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 75-76, 82, text figs. 56-59, 63, 64, pl. 4, figs. 1-5 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 611—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 357, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 357, 361—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 137, text fig. 1390c—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 27—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 32 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 117-119, text fig. 23, pl. 24, figs. 1-5.

Goniatites (Manticoceras) sororium GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 301-302, text figs. 239, 240.

Goniatites sororium HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Gephyroceras sororium CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350—Geol. Soc. Am., Bull., vol. 46 (1935) p. 320.

Angola and Wiscoy members of Chemung: western New York; and possibly the Cashaqua shale member of the Naples in the same general area.

Manticoceras styliophilum Clarke

Manticoceras patersoni ["*pattersoni*"] *styliophilum* CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [*nomen nudum*]; CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 47-48, 75, 82, text figs. 2, 55, 63, 64, pl. 6, fig. 30 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 609—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 360; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359-360—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—SCHMIDT, Pal. Zeitschr. Bd. 7 (1926) p. 201.

Gephyroceras pattersoni styliophilum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 311.

Manticoceras styliophylum MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 33 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 119-121, text fig. 24, pl. 20, fig. 5.

Genesee and Naples: central New York.

Manticoceras tardum Clarke

Manticoceras tardum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [*nomen nudum*]; N. Y.

State Geol., Ann. Rept. 16 (1899) p. 63-64, 81, text figs. 63, 64, pl. 1, fig. 13, pl. 6, fig. 31 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 611—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 34 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 121-123, pl. 24, figs. 6, 7.

Gephyroceras tardum CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 315.

Cashaqua shale member of Naples: Briggs Gully, N. Y.

Manticoceras unduloconstrictum Miller

Manticoceras unduloconstrictum MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 123-124, pl. 22, figs. 7-9.

Lower part of New Albany shale: near Delphi, Ind.

Manticoceras vagans Clarke

Manticoceras vagans CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 78-79, 82, text figs. 62, 63, 64, pl. 6, figs. 11, 12 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 611—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 24—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 35 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 124-125, pl. 15, figs. 11-14.

Gephyroceras vagans CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., vol. 46 (1935) p. 320.

Grimes sandstone member of Chemung: Naples, N. Y.; and/or possibly the Cashaqua shale member of the Naples of New York.

METAPHRAGMOCERAS Flower (Poterioceratidae)

GENOTYPE: *Phragmoceras verneuili* Barrande

Metaphragmoceras FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 64-65.

Metaphragmoceras dubium Flower

Metaphragmoceras dubium FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 67, text figs. 7, 8, pl. 4, fig. 21.

Onondaga: Leroy, N. Y.

Metaphragmoceras triangulatum Flower

Metaphragmoceras triangulatum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 65, text figs. 9, 10, pl. 4, fig. 11.

Onondaga: Leroy, N. Y.

MICHELINOCERAS Foerste (Orthocerotidae)

GENOTYPE: *Orthoceras michelini* Barrande

Michelinoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 27 (1932) p. 72—TEICHERT and MILLER, Am. Jour. Sci., 5th ser., vol. 31 (1936) p. 360—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 18.

Michelinoceras? accelerans (Raymond)

Orthoceras cf. *O. gregarium* RAYMOND [Holzapfel], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 117, 120.

Geisonoceras accelerans RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 149-150, pl. 6, figs. 8, 9—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 26.

Three Forks: Three Forks, Montana.

Michelinoceras? aciculoides (Clarke)

Orthoceras aciculoides CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 51, pl. 2, fig. 11—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 540, text fig.

Naples: Cashaqua Creek, Ontario Co., N. Y.

Michelinoceras? algomense (Parks)

Orthoceras algomense PARKS, Ontario Bur. Mines, Rept. for 1904, pt. 1 (1904) p. 189, pl. 6, figs. 1, 3.

Devonian: Kwataboahegan River, Ontario.

Michelinoceras? anax (Billings)

Orthoceras anax BILLINGS, Can. Nat., n. ser., vol. 7 (1874) p. 238—WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 403-404, 417—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 238, 248.

Hamilton: Ontario.

Michelinoceras? aff. M.? anguliferum (d'Archiac and de Verneuil)

Orthoceras aff. *O. anguliferum* KINDLE, Jour. Geol., vol. 15 (1907) p. 326.

Middle? Devonian: Long Island, Kasaa Bay, Alaska.

Michelinoceras? anguliferum alpenense (Foerste)

Orthoceras anguliferum alpenense FOERSTE, Univ. Mich., Mus. Pal., Contr., vol. 3, no. 6 (1930) p. 136-138, pl. 1, fig. 2, pl. 4, figs. 1, 2.

Alpena: Alpena, Mich.

Michelinoceras? arkonense (Whiteaves)

Orthoceras arkonense WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 406-407, 417, pl. 48, figs. 13, 14, 14a—STAUFFER, Ohio Nat., vol. 8, no. 5 (1908) p. 276; Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 149, 182; Can. Geol. Survey, Mem. 34 (1915) p. 172.

Widder: Ontario; and possibly the Middle Devonian of Ohio.

Michelinoceras? cingulum (Hall)

Orthoceras cingulum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 240-241, text figs. 1, 2, pl. 76, figs. 2, 3—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 85—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 621—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? clarkei (Cleland)

Orthoceras clarkei CLELAND, Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 19, 134, pl. 42, figs. 2, 2A.

Milwaukee: Milwaukee, Wis.

Michelinoceras? collatum (Hall)

Orthoceras collatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 252-253, pl. 80, figs. 1, 3, 4—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 621—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? dagon (Hall)

Orthoceras dagon HALL, N. Y. Assembly Doc. 105 (1886) pl. (129) 14, fig. 1—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 28, pl. 129, fig. 1—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168—GRABAU [Stauffer] Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Columbus: central Ohio.

Michelinoceras? demus (Hall)

Orthoceras demus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 311, pl. 90, figs. 1, 4, 5—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 547, text figs.—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 623-624—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 443, 459, 496, 500, 691, pl. 71, figs. 14, 15—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 317, 325.

Naples and Canadaway: New York; and possibly the basal Conewango of New York and the Upper Devonian of Pennsylvania, Maryland, and West Virginia.

Michelinoceras? directum (Hall)

Orthoceras directum HALL, N. Y. Assembly Doc. 105 (1886) pl. (117) 1, figs. 6, 7—BEECHER, Pal. N. Y., vol. 5, pt. 2 (1888) p. 27, pl. 117, figs. 6, 7.

Delaware?: Delaware, Ohio.

Michelinoceras? duramen (Hall)

Orthoceras duramen HALL, N. Y. Assembly Doc. 105 (1886) pl. (117) 1, fig. 1 BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 25-26, pl. 117, fig. 1—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 624—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? emaceratum (Hall)

Orthoceras emaceratum HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 170, pl. 8, fig. 7; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 39, fig. 4; Pal. N. Y., vol. 5, pt. 2 (1879) p. 292, pl. 39, fig. 4, pl. 85, fig. 16—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 549, text fig.—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 290, text fig. 225A—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 624—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 54—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 67, 108, 313, pl. 40, fig. 7—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Hamilton: New York; and possibly the Romney of Maryland and West Virginia.

Michelinoceras? eriense (Hall)

Orthoceras robustum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 40, figs. 1-4. [Not *Orthoceras robustum* WINCHELL, 1862.]

Orthoceras eriense HALL, in MILLER, The American Palaeozoic fossils, A catalogue of the genera and species . . . , ed. 2 (1877) p. 174—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 225, 274-275, pl. 40, figs. 1-4, pl. 87, figs. 1, 2—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 286-287, text fig. 220—CLARKE and RUEDEMANN, N. Y.

State Mus., Bull. 65 (1903) p. 624-625—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 123, 149, 168, 182—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 52, text figs. 1253—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—STAUFFER, Canada Geol. Survey, Mem. 34 (1915) p. 226, 236.

Hamilton and Marcellus: New York; and possibly the Middle Devonian of Ontario and Ohio.

Michelinoceras? exile (Hall)

Orthoceras exile HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 50—N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 78, pl. 8, fig. 5—NICHOLSON, Report upon the palaeontology of the Province of Ontario, Toronto (1875) p. 83—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 39, fig. 3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 290-291, pl. 39, fig. 3, pl. 84, fig. 3, pl. 85, figs. 1, 2, 14, 15—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 549, text figs.—KEYES, Johns Hopkins Univ. Circ., vol. 11 (1891) p. 29—WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 406, 417—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 288-289, text fig. 222—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 625—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 48, 51, 54—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 19, 21—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 52, text fig. 1252a—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 13—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 69, 108, 310-311, pl. 39, figs. 9-11—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 13—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11, no. 1 (1914) p. 91—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 168, 172, 236—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 813, 859.

Marcellus, Hamilton, and Tully: New York; and possibly the Romney of Maryland and the Widder of Ontario.

Michelinoceras? extremum (Parks)

Orthoceras extremum PARKS, Ontario Bur. Mines, Rept. for 1904, pt. 1 (1904) p. 189, pl. 6, fig. 7.

Devonian: Kwataboahagan River, Ontario.

Michelinoceras? fulgidum (Hall)

Orthoceras fulgidum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 310-311, pl. 90, figs. 2, 3—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 626—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Naples: Ithaca, N. Y.

Michelinoceras? gracilium (Winchell)

Orthoceras gracilius WINCHELL, Philadelphia Acad. Nat. Sci., Pr. (1862) p. 429.

Upper? Devonian: Union, Mich.

Michelinoceras? griffithi (Haughton)

Orthoceras griffithi HAUGHTON, Royal Dublin Soc., Jour., vol. 1 (1858) p. 239, pl. 5, fig. 1 [part]—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 41 [part]—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 906 [part]—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1908) p. 20-23, pl. 14, fig. 4, pl. 22, figs. 5A, 5B; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Griffith Island, Arctic America.

Michelinoceras? helderbergiae (Hall)

Orthoceras helderbergiae HALL, Pal. N. Y., vol. 3 (1859) p. 345, pl. 72, fig. 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 626—SHIMER, N. Y.

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State Mus., Ann. Rept. 57, vol. 1, pt. 1 (1905) p. 259—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320-323.

New Scotland and Coeymans: New York.

Michelinoceras? kingii (Meek)

Orthoceras kingii MEEK, U. S. Geol. Exploration Fortieth Parallel (King), vol. 4, pt. 1 (1877) p. 47-48, pl. 2, fig. 8.

Nevada: White Pine district, Nevada.

Michelinoceras? lambtonense (Whiteaves)

Orthoceras lambtonense WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 404-405, 417, pl. 49, figs. 1, 1a—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 161, 168, 176, 179, 226, 236.

Widder: Ontario.

Michelinoceras? masculum (Hall)

Orthoceras masculum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 238, pl. 78B, fig. 1—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 631—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? medium (Hall)

Orthoceras medium HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 254-255, pl. 79, figs. 11, 12—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 631—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? mephisto (Clarke)

Orthoceras mephisto CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 29-30, pl. 3, fig. 2—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 552, text fig.

Orthoceras scintilla mephisto LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 915, 919, pl. 4, fig. 14—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 57—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 313.

Tully and Genesee: New York.

Michelinoceras? molestum (Hall)

Orthoceras molestum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) p. 35, fig. 6 [not 8; not pl. 37, fig. 1]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 265-266, pl. 35, fig. 13—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51—GRABAU [STAUFFER] Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Onondaga: Erie Co., N. Y.; and possibly the Columbus of central Ohio.

Michelinoceras? montanense (Raymond)

Orthoceras sp. RAYMOND [HOLZAPFEL], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 117, 120.

Orthoceras montanense RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 148-149, pl. 6, figs. 4-6—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 26.

Three Forks: Three Forks, Montana.

Michelinoceras? normale (Raymond)

Orthoceras sp. RAYMOND [HOLZAPFEL], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 117, 120.

Geisonoceras normale RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 149, pl. 6, fig. 7—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 26.

Three Forks: Three Forks, Montana.

Michelinoceras? novgoracense Flower

Orthoceras constrictum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 288-289, pl. 84, figs. 13, 14, 16, pl. 85, figs. 5, 10, 11, 13—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 621 [part]—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51-52, text fig. 1251. [Not *Orthoceras constrictum* CONRAD, 1838; and not *O. constrictum* VANUXEM, 1842.]

Michelinoceras novboracense FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 22-23.

Hamilton: New York.

Michelinoceras? ohioense (Hall)

Orthoceras pelops ohioense HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 36, fig. 1.

Orthoceras ohioense HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 236-237, pl. 35A, figs. 8, 9, pl. 36, fig. 4; N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 554—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 34, 36, 61, 65, 69, 72, 169, 182, 195—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 371.

Columbus and Delaware: Ohio; and possibly the Middle Devonian of Monroe Co., Pa.

Michelinoceras? ontarioense (Foerste)

Orthoceras ontarioense FOERSTE, Ontario Dept. Mines, Ann. Rept. 37, pt. 6, appd. (1929) p. 70-71, pl. 1, figs. 1A-1C.

Abitibi River: West branch French River, Ontario.

Michelinoceras? pacator (Hall)

Orthoceras pacator HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 307-308, pl. 89, figs. 1-6—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 21, 51—KINDLE, Bull. Am. Pal., vol. 2, no. 6 (1896) p. 17—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 634—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61, 62—KINDLE, Jour. Geol., vol. 14 (1906) p. 189—WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 8—CLARKE and LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 25, 28—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 316-317, 321.

Naples and Chemung: New York.

Michelinoceras? parallelum (Meek)

Orthoceras parallelum MEEK, U. S. Geol. Exploration Fortieth Parallel (King), vol. 4, pt. 1 (1877) p. 48, pl. 2, fig. 9.

Nevada: Babylon Hills, White Pine mining district, Nevada.

Michelinoceras? parliense (Williams and Berger)

Orthoceras parliense WILLIAMS and BERGER, U. S. Geol. Survey, Prof. Pap. 89 (1916) p. 283, pl. 13, figs. 21?, 25.

Moose River: Somerset Co., Maine.

Michelinoceras? pauciseptum (Hall)

Orthoceras pauciseptum HALL, Pal. N. Y., vol. 3 (1859) p. 346, pl. 72, figs. 5a, 5b—SCHUCHERT, Geol. Soc. Am., Bull., vol. 11 (1900) p. 287—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 635—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320, 323—REESIDE, U. S. Geol. Survey, Prof. Pap. 108 (1917) p. 203, 213.

New Scotland and Coeymans: Schoharie, N. Y.; and possibly the Keyser of Pennsylvania and the Lower Devonian of Oklahoma.

Michelinoceras? pelops (Hall)

Orthoceras pelops HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 45; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 73; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, fig. 2 [not 1-3], pl. 37, figs. 8, 9; Pal. N. Y., vol. 5, pt. 2 (1879) p. 233-235, pl. 35, figs. 1-3, pl. 35A, figs. 1-6, pl. 37, figs. 3, 4, pl. 78B, fig. 2—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 555, text fig.—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 187, 326, text fig. 108—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51, text fig. 1249—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 151, 248.

Orthoceras (Geisonoceras) pelops CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 635-636.

Schoharie: New York; and possibly the Onondaga of Ontario and the Middle Devonian of New Jersey.

Michelinoceras? pervicax (Hall)

Orthoceras pervicax HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 257-258, pl. 79, figs. 9, 10—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 636—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? pravum (Hall)

Orthoceras tetricum [part] HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 45; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 73; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 36, fig. 2.

Orthoceras pravum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 255-257, pl. 35, fig. 14, pl. 36, fig. 1, pl. 81, figs. 1-8, pl. 112, figs. 15-17—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 636-637—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 187, 327, text fig. 111.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? princiana (Williams and Berger)

Orthoceras princiana WILLIAMS and BERGER, U. S. Geol. Survey, Prof. Paper 89 (1916) p. 282-283, pl. 13, fig. 17.

Moose River: Detroit, Maine.

Michelinoceras? procerum (Hall)

Orthoceras procrus HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, fig. 4. [Apparently a misprint and was intended to read *Orthoceras procerus*.]

Orthoceras procerum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 249-250, pl. 35, figs. 15, 16, pl. 78A, figs. 1-8, pl. 79, figs. 5-8—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 637-638—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? pustulosum (Winchell)

Orthoceras pustulosum WINCHELL, The Grand Traverse region . . . (1866) p. 86, 97.

Traverse: Benzie or Leelanaw Co., Mich.

Michelinoceras? rigidum (Hall)

Orthoceras rigidum HALL, Pal. N. Y., vol. 3 (1859) p. 344, pl. 70, figs. 3a-3d—SCHUCHERT, Geol. Soc. Am., Bull., vol. 11 (1900) p. 287—MAYNARD, Md. Geol. Survey, Lower Devonian (1913) p. 130, 149, 488, pl. 88, fig. 5.

Coeymans: Herkimer Co., N. Y.; and possibly the Keyser of Maryland and the Lower Devonian of Maine and New Brunswick.

Michelinoceras? rude (Hall)

Orthoceras rudis HALL, Pal. N. Y., vol. 3 (1859) p. 346, pl. 72, figs. 4a, 4b—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 638—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320-323—SCHUCHERT, Geol. Soc. Am., Bull., vol. 11 (1900) p. 287.

Coeymans and New Scotland: Schoharie, N. Y.; and possibly the Lower Devonian of Oklahoma.

Michelinoceras? sceptrum (Hall)

Orthoceras sceptrum HALL, N. Y. Assembly Doc. 105 (1886) pl. (117) 1, fig. 2—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 26-27, pl. 117, fig. 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 639—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42.

Onondaga: New York.

Michelinoceras? scheii (Foerste)

Endoceras schei FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1925) p. 15 [*nomen nudum*].

Orthoceras? scheii FOERSTE, Rept. Sci. Results of the Norwegian Expedition to Novaya Zemlya 1921, no. 31, Det Videnskaps-Akademi i Oslo (1925) p. 3, 10 [*nomen nudum*]; Rept. Second Norwegian Arctic Expedition in the "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 6-8, text fig. 1, pl. 1, fig. 1.

Middle Devonian: Gaase-fjorden (Goose-fjord), southwestern Ellesmere Island.

Michelinoceras? scintilla (Hall)

Orthoceras scintilla HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 293-294, pl. 84, figs. 19-21, pl. 113, figs. 6-12—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 639-640.

Hamilton: Pratt's Falls, Onondaga Co., N. Y.

Michelinoceras? sirpus (Hall)

Orthoceras sirpus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 269, pl. 112, figs. 3, 4—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 36, 69, 169—GRABAU [STAUFFER], Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Columbus: central Ohio.

Michelinoceras? spissum (Hall)

Orthoceras spissum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 287-288, pl. 85, figs. 6-9—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Hamilton and Tully: New York.

Michelinoceras? stylus (Hall)

Orthoceras baculum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 46; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 73, 74, pl. 8, fig. 6; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 36, figs. 3, 4 [not pl. 37, fig. 2]—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 543, text fig. [Not *Orthoceras baculum* MEEK, 1860.]

Orthoceras stylus HALL, in MILLER, The American Palaeozoic fossils, A catalogue of the genera and species . . . , ed. 2 (1877) p. 245—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 253-254, pl. 36, figs. 2, 3, pl. 79, figs. 1-3—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 640-641—GRABAU N. Y. State Mus., Bull. 92 (1906) p. 187, 327, text fig. 110.

Orthoceras (Protobactrites) stylus GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51, text fig. 1250.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras sublaeve d'Orbigny

Orthoceras laeve HALL, Geol. N. Y., pt. 4, Survey fourth geol. district (1843) p. 138, text fig. 54 (2). [Not *Orthoceras laeve* FLEMING, 1825.]

Orthoceras sublaeve d'ORBIGNY, Prodrome de Paléontologie stratigraphique universelle, tome 1 (1850) p. 28—LESLEY, Pa. Geol. Survey, Rept P4 (1889) p. 559, text fig.

Onondaga: Newark, N. Y.

Michelinoceras? subulatum (Hall)

Slender orthocera VANUXEM, Geol. N. Y., pt. 3, Survey third geol. district (1842) p. 148. [Not a Linnean name.]

Orthoceras subulatum HALL, Geol. N. Y., pt. 4, Survey fourth geol. district (1843) p. 180, text fig. 71 (1)—ROGERS, Geol. Pa. . . . , vol. 2 (1858) p. 826, text fig. 654—HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 49—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 12, fig. 1—HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 77; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 38, fig. 3 [not 1, 2]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 283-284, pl. 38, fig. 3, pl. 84, figs. 1, 2, 4, 6-10, pl. 86, figs. 1, 2—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 559-560, text figs.—WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 405, 417—GRABAU, Buffalo Soc. Nat. Sci., Bull. (vol. 6) 1899, p. 288, text fig. 221—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 135—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 641—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 44, 45—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 15, 16—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 207, 329—LUTHER, N. Y. State Mus., Bull. 137 (1910) p. 18, 20; N. Y. State Mus., Bull. 152 (1911) p. 10, 12—KINDLE, U. S. Geol. Survey, Bull. 508 (1912) p. 34, 106—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 69, 108, 308-309, pl. 39, figs. 1-4—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 12—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 161, 172, 179, 226, 236—PROSSER, Jour. Geol., vol. 23 (1915) p. 15—BRANSON and WILLIAMS, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1922) p. 157-158, pl. 37, fig. 10—REGER, West Va. Geol. Survey, Mineral and Grant counties (1924) p. 748—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1925) p. 313—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 800, 806, 859.

Orthoceras (Geisonoceras) subulatum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 52-53, text fig. 1252b.

Marcellus, Hamilton, Tully, and Genesee: New York; and possibly the Romney of Maryland, Pennsylvania, and West Virginia, the Onondaga of Pennsylvania, the Middle Devonian of Ontario, and the Grand Tower of southeastern Missouri.

Michelinoceras? subulatum pygmaeum (Loomis)

Orthoceras subulatum pygmaeum LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 914, 919, pl. 4, fig. 14—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 57—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 21.

Hamilton: New York.

Michelinoceras? swarthy Flower

Michelinoceras swarthy FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 18-20, pl. 1, figs. 1-3.

Cherry Valley limestone member of Marcellus: Union Springs and Stockbridge, N. Y.

Michelinoceras? tantalus (Hall)

Orthoceras tantalus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 241-243, pl. 35, figs. 8-10, pl. 35A, figs. 7, 10—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 642—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? telamon (Hall)

Orthoceras telamon HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 291-292, pl. 85, figs. 3, 4, 12—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 289, text fig. 223—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 642—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 108, 311-312, pl. 40, figs. 1-6—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11, no. 1 (1914) p. 91—PROSSER, Jour. Geol., vol. 23 (1915) p. 25—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Hamilton and Tully: New York; and possibly the Romney of Maryland and West Virginia.

Michelinoceras? tenere (Hall)

Orthoceras tenere HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 285, pl. 113, fig. 15.

Sellersburg?: Falls of the Ohio.

Michelinoceras? tersum (Hall)

Orthoceras tersum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 286-287, pl. 84, fig. 5.

Hamilton: central New York.

Michelinoceras? tetricum (Hall)

Orthoceras tetricum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 45 [part]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 251-252, pl. 78B, fig. 4, pl. 80, figs. 2, 5, 6, 8, 9—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 643—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Michelinoceras? thyestes (Hall)

Orthoceras thyestes HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 306, pl. 88, fig. 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 645—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 316, 321.

Naples and Chemung: New York.

Michelinoceras? uniconstrictum (Miller)

Orthoceras constrictum VANUXEM, Geol. N. Y., pt. 3, Survey third geol. district (1842) p. 153, text fig. 37 (1)—HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 49—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14 (1861) pl. 14, fig. 10—HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 77—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—KEYES, Johns Hopkins Univ. Circ., vol. 11 (1891) p. 29—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 291, text fig. 225C—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 621 [part]—CLARKE and MATHEWS, Md. Geol. Survey, Spec. Pub. 6 (1906) pl. 17, fig. 14—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 155, 182—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 67, 69, 108, 309-310, pl. 39, figs. 5-8—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 119, 236, 240—PROSSER, Jour. Geol., vol. 23 (1915) p. 15—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859. [Not *Orthoceras constrictum* CONRAD, 1838.]

Orthoceras uniconstrictum MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 331.
Michelinoceras uniconstrictum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 20-21.

Hamilton and Tully?: New York; and possibly the Hamilton of Ontario, the Romney of Maryland and West Virginia, and the Middle Devonian of northwestern Ohio.

Michelinoceras? viator (Hall)

Orthoceras baculum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 37, fig. 2 [not pl. 36, figs. 3, 4].

Orthoceras viator HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 270, pl. 37, fig. 5.

Onondaga: Clarence Hollow, Erie Co., N. Y.

Michelinoceras? zeus (Hall)

Orthoceras zeus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 235-236, pl. 75, figs. 1-3—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 295, 326—BAKER [STAUFFER], Ontario Bur. Mines, Ann. Rept., vol. 20, pt. 1 (1911) p. 227—GOLDRING, N. Y. State Mus., Handb. 14 (1933) p. 87-88.

Schoharie: Schoharie and Albany counties, N. Y.; and possibly the Onondaga of Mattagami River, Ontario.

MICRONOCERAS Flower (Poterioceratidae)

GENOTYPE: *Micronoceras delphicolum* Flower

Micronoceras FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 46-47.

Micronoceras angulatum Flower

Micronoceras angulatum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 49, pl. 2, fig. 16.

Tichenor limestone member of Hamilton: near Darien, N. Y.

Micronoceras apertum Flower

Micronoceras apertum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 49-50, pl. 4, figs. 4, 5.

Skaneateles member of Hamilton: near Skaneateles Lake, N. Y.

Micronoceras? fax (Hall)

Gomphoceras fax HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 321-322; N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 5—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 32, 37, pl. 122, fig. 5—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Gomphoceras (*Poterioceras*) *fax* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 591.

Acleistoceras? fax FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 23.

Micronoceras? fax FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 68-69.

Schoharie: Schoharie, N. Y.

Micronoceras gibbosum (Hall)

Cyrtoceras? gibbosum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 47, figs. 3, 4.

Gomphoceras oviforme [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 344-346, pl. 46, figs. 6, 7 [not pl. 45, figs. 1-4, pl. 94, figs. 6, 7].

Ovoceras? gibbosum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 68-69, pl. 4, fig. 6, pl. 8, fig. 3.

Micronoceras gibbosum FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 48-49, 73, pl. 1, figs. 13, 14.

Cherry Valley limestone member of Marcellus: Onondaga Co., N. Y.

Micronoceras? poculum (Hall)

Gomphoceras poculum HALL, *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 340-341, pl. 93, figs. 7, 8—CLARKE and RUEDEMANN, *N. Y. State Mus.*, Bull. 65 (1903) p. 593.

Acleistoceras poculum FOERSTE, *Univ. Mich.*, *Mus. Geol.*, Contr., vol. 2 (1927) p. 190.

Micronoceras? poculum FLOWER, *Palaeontographica Americana*, vol. 2, no. 9 (1938) p. 73.

Hamilton: Cazenovia, N. Y.

Micronoceras raphanus (Hall)

Gomphoceras raphanus [part] *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 347-348, pl. 94, figs. 2-4 [not 5, 10]—KINDLE, *Ind. Dept. Geol. and Nat. Res.*, *Ann. Rept.* 25 (1901) p. 741—STAUFFER, *Can. Geol. Survey*, Mem. 34 (1915) p. 236.

Gomphoceras (Poterioceras) raphanus [part] CLARKE and RUEDEMANN, *N. Y. State Mus.*, Bull. 65 (1903) p. 593-594.

Poterioceras raphanus GRABAU and SHIMER, *North American index fossils, Invertebrates*, vol. 2 (1910) p. 130—STAUFFER, *Can. Geol. Survey*, Mem. 34 (1915) p. 142.

Acleistoceras raphanus FOERSTE, *Univ. Mich.*, *Mus. Geol.*, Contr., vol. 2 (1927) p. 197-198.

Micronoceras raphanus FLOWER, *Palaeontographica americana*, vol. 2, no. 9 (1938) p. 47-48, 73, pl. 4, fig. 3.

Hamilton: central New York and possibly southern Ohio; and possibly the Sellersburg of Indiana.

MITROCERAS Hyatt (Hercoceratidae)

GENOTYPE: *Trochoceras gebhardii* Hall

Mitroceras HYATT, *Am. Phil. Soc.*, Pr., vol. 32 (1894) p. 503—GRABAU and SHIMER, *North American index fossils, Invertebrates*, vol. 2 (1910) p. 74—RUEDEMANN, *N. Y. State Mus.*, Bull. 265 (1925) p. 61-63.

Trochoceras HALL, *Pal. N. Y.*, vol. 2 (1852) p. 335; *N. Y. State Cab. Nat. Hist.*, *Ann. Rept.* 15 (1862) p. 64; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 390-391 [part]—MILLER, *North American geology and palaeontology for the use of amateurs, students, and scientists* (1889) p. 455—GRABAU, *N. Y. State Mus.*, Bull. 45 (1901) p. 217; *Buffalo Soc. Nat. Sci.*, Bull., vol. 7 (1901) p. 217. [Not *Trochoceras* Barrande, 1847.]

Mitroceras? anderdonense (Grabau)

Trochoceras anderdonense GRABAU, *Mich. Geol. and Biol. Survey*, *geol. ser.* 1, Pub. 2 (1910) p. 200, 213, pl. 28, fig. 9, pl. 29, figs. 5, 6—STAUFFER, *Can. Geol. Survey*, Mem. 34 (1915) p. 275, 278, 280; *Geol. Soc. Am.*, Bull., vol. 27 (1916) p. 75.

Tachoceras anderdonensis GRABAU and SHERZER, *Mich. Geol. and Biol. Survey*, *geol. ser.* 1, Pub. 2 (1910) p. 49. [The generic name "*Tachoceras*" is obviously a misprint and was intended to read *Trochoceras*.]

Detroit River?: Ontario.

Mitroceras gebhardii (Hall)

Trochoceras gebhardii HALL, *Pal. N. Y.*, vol. 2 (1852) p. 335, pl. 77, fig. 2, pl. 77A, figs. 1a-1d—GRABAU, *Geol. Soc. Am.*, Bull., vol. 11 (1900) p. 371, pl. 21, figs. 3a, 3b; *N. Y. State Mus.*, Bull. 45 (1901) p. 217, text fig. 149—CLARKE and RUEDEMANN, *N. Y. State Mus.*, Bull. 65 (1903) p. 656—GRABAU, *N. Y. State Mus.*, Bull. 92 (1906) p. 110, 111, text fig. 16; *Mich. Geol. and Biol. Survey*, *geol. ser.* 1, Pub. 2 (1910) p. 199, pl. 31, figs. 3a, 3b—STAUFFER, *Canada Geol. Survey*, Mem. 34 (1915) p. 275.

Mitroceras gebhardi HYATT, *Am. Phil. Soc.*, Pr., vol. 32 (1894) p. 503—GRABAU

and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 75, text figs. 1289, 1290—RUEDEMANN, N. Y. State Mus., Bull. 265 (1925) p. 63-65, text figs. 38, 39, pl. 19, fig. 2.

Upper Silurian: New York; and possibly the Lower Devonian? (Detroit River) at Beachville, Ontario.

Monocyrtoceras? arcticum (Foord) = Offleyoceras arcticum

NAEDYCERAS Hyatt (Hercoceratidae)

GENOTYPE: *Trochoceras eugenium* Hall

Naedyceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 281—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 374—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 113-114—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 23, 69.

Naedyceras? barrandei (Hall)

Trochoceras barrandei HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 398-399, pl. 111, figs. 8-10—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 653-654—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Naedyceras cornutum (Owen)

Gyroceras cornutum OWEN, U. S., 28th Cong., 1st sess., Senate Ex. Doc. 407, serial set no. 437 (1844) p. 69, pl. 12, fig. 8.

OWEN, U. S., 26th Cong., 1st sess., House Ex. Doc. 239, serial set no. 467 (1845) [not serial set no. 368, 1840], pl. 12 [opposite p. 80], fig. 8. [Illustration only, that is, no name accompanies the figure.]

Cedar Valley?: east-central Iowa or adjacent part of Illinois.

Naedyceras? expansum (Hall)

Trochoceras obliquatus HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, fig. 6 [not 5].

Trochoceras expansum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 402-403, pl. 58, fig. 6, pl. 111, fig. 5—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 655—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie, N. Y.

Naedyceras eugenium (Hall)

Trochoceras eugenium HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 14 (1861) p. 108; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 59, figs. 8, 9; Pal. N. Y., vol. 5, pt. 2 (1879) p. 396-397, pl. 58, figs. 3, 4, pl. 69, figs. 10, 11—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 655—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 190, 327, text fig. 116—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 114.

Trochoceras? sp. HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, figs. 3, 4.

Naedyceras eugenium HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 281.

Schoharie: New York.

Naedyceras? obliquatum (Hall)

Trochoceras obliquatum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, fig. 5 [not 6]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 401-402, pl. 58, fig. 5, pl. 111, figs. 1, 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 656—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Naedyceras olenus (Hall)

Cyrtoceras Orion HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, fig. 2. [Not *Cyrtoceras orion* BARRANDE, 1867.]

Cyrtoceras olenus HALL in MILLER, The American Palaeozoic fossils, A catalogue of the genera and species, . . . , ed. 2 (1877) p. 243.

Trochoceras orion HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 397-398, pl. 58, fig. 2—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 656—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Naedyceras opimum (Keyes)

Cyrtoceras opimum KEYES, Philadelphia Acad. Nat. Sci., Pr. (1888) p. 247-248, pl. 12, fig. 5.

Davenport?: Johnson Co., Iowa.

Naedyceras? pandion (Hall)

Trochoceras pandion HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, figs. 7-9; Pal. N. Y., vol. 5, pt. 2 (1879) p. 400, pl. 58, figs. 7-9, pl. 111, fig. 3—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 656-657—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

NASSAUOCERAS Miller (Tainoceratidae)

GENOTYPE: *Nautilus subtuberculatus* G. and F. Sandberger

Cryptoceras d'ORBIGNY, Cours élémentaire de paléontologie et de géologie stratigraphiques, tome 1 (1849) p. 268. [Not *Cryptoceras* Barrande, (1846) 1847.]

Nassauoceras MILLER, Univ. Iowa Studies in Nat. Hist., vol. 14, no. 4 (1932) p. 42.

Nassauoceras seminodosum (Whitfield)

Gyroceras seminodosum WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 211, 243; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 533-534, pl. 8, fig. 5; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 431, pl. 4, fig. 5—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 168.

Columbus: central Ohio.

Nautilus acraeus Hall = **Nephriticeras acraeum**

Nautilus (**Nephriticeras**) **acraeus** Hall = **Nephriticeras acraeum**

Nautilus (**Discites**) **ammonis** Hall = **Centroceras ammonum**

Nautilus Barrandi Hall [not von Hauer] = **Nephriticeras magister**

Nautilus bucinum Hall = **Nephriticeras bucinum**

Nautilus (**Nephriticeras**) **bucinum** Hall = **Nephriticeras bucinum**

Nautilus cavus Hall = **Nephriticeras cavum**

Nautilus cornulum Hall = **Rhadinoceras cornulum**

Nautilus hyatti Hall = **Nephriticerina hyatti**

Nautilus (**Nephriticeras**) **hyatti** (Hall) = **Nephriticerina hyatti**

Nautilus inopinatus Hall = **Diadiploceras inopinatum**

Nautilus (**Discites**) **inopinatus** Hall = **Diadiploceras inopinatum**

Nautilus (**Nephriticeras**) **juvenis** Hall = **Nephriticerina juvenis**

Nautilus? **lawsii** Swallow = **Nephriticeras?** **lawsii**

- Nautilus liratus* (Hall) = *Lyrioceras liratum*
Nautilus (*Nephriticeras*) *liratus* (Hall) = *Lyrioceras liratum*
Nautilus liratus juvenis Hall = *Nephriticerina juvenis*
Nautilus magister Hall = *Nephriticeras magister*
Nautilus (*Nephriticeras*) *magister* Hall = *Nephriticeras magister*
Nautilus marcellensis (Vanuxem) = *Centroceras marcellense*
Nautilus (*Centroceras*) *marcellensis* (Vanuxem) = *Centroceras marcellense*
Nautilus (*Discites*) *marcellensis* (Vanuxem) = *Centroceras marcellense*
Nautilus maximus (Conrad) = *Nephriticeras maximum*
Nautilus (*Nephriticeras*) *maximus* (Conrad) = *Nephriticeras maximum*
Nautilus oriens Hall = *Nephriticeras oriens*
Nautilus (*Nephriticeras*) *oriens* Hall = *Nephriticeras oriens*
Nautilus ornatus Hall = *Centroceras marcellense*
Nautilus (*Discites*) *ornatus* Hall = *Centroceras marcellense*
Nautilus quadratus Hall = *Diadiploceras quadratus*
Nautilus subliratus (Hall) = *Lyrioceras subliratum*
Nautilus (*Nephriticeras*) *subliratus* (Hall) = *Lyrioceras subliratum*
Nautilus or *Gyroceras* sp. Billings = *Tetranodoceras submamillatum*

NEOCYCLOCERAS Flower and Caster (Orthocerotidae)

GENOTYPE: *Neocycloceras obliquum* Flower and Caster

Neocycloceras FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 14-16.

Neocycloceras? *cadwaladeri* Flower and Caster

Neocycloceras? *cadwaladeri* FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 22-24, pl. 2, fig. 3.

Conewango?: near Warren, Pa.

Neocycloceras harrisi Flower and Caster

Neocycloceras harrisi FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75, p. 19-21, pl. 2, figs. 4, 5, 7-9.

Pope Hollow conglomerate member of Salamanca: Warren Co., Pa.

Neocycloceras lilianae Flower and Caster

Neocycloceras lilianae FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 21-22, pl. 2, figs. 6, 10.

Pope Hollow conglomerate member of Salamanca: Warren Co., Pa.

Neocycloceras obliquum Flower and Caster

Neocycloceras obliquum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 16-18, pl. 1, figs. 1-10, pl. 2, fig. 1.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

Neocycloceras obliquum geronticum Flower and Caster

Neocycloceras obliquum geronticum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 18-19, pl. 2, fig. 2.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

NEOMANTICOCERAS Schindewolf (Beloceratidae)GENOTYPE: *Manticoceras paradoxum* Matern

Neomanticoceras SCHINDEWOLF, Deutsch. geol. Ges., Zeitschr., Bd. 88 (1937) p. 690—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 135.

(?) *Anabeloceras* [*nomen nudum*] CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53.

Neomanticoceras naplesense (Clarke)

(?) *Anabeloceras pseustes* [*nomen nudum*] CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53.

Proboloceras? *naplesense* CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 105, text fig. 78, pl. 7, fig. 18 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 649—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 380; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 380—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Timanites (*Proboloceras*) *Naplesense* FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 26.

Neomanticoceras naplesense SCHINDEWOLF, Deutsch. Geol. Ges., Zeitschr., Bd. 88 (1936) p. 690—MILLER, Geol. Soc. Am., Spec. Paper 14 (1938) p. 135-136, pl. 12, fig. 11.

Cashaqua shale member of Naples: Naples, N. Y.

NEPHRITICERAS Hyatt (Rhadinoceratidae)GENOTYPE: *Nautilus bucinum* Hall

Nephriticeras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 300—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 382—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 531-532; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 523—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 84-85—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 604—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 191-192—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 51-52.

Nephriticeras acraeum (Hall)

Nautilus acraeus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 417-418, pl. 109, figs. 33-5—TALBOT, Am. Jour. Sci., 4th ser., vol. 16 (1903) p. 150.

Nautilus (*Nephriticeras*) *acraeus* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 612.

Nephriticeras acraeum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192.

Marcellus and Hamilton: New York.

Nephriticeras bucinum (Hall)

Gyroceras expansum SAEMANN, Palaeontographica, Bd. 3 (1854) p. 167, pl. 21, figs. 2a-2c—HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 104; Pal. N. Y., vol. 5, pt. 2 (1879) p. 412—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 20. [Not *Nautilus expansus* SOWERBY, 1825.]

Nautilus bucinum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 60, figs. 1-4; Pal. N. Y., vol. 5, pt. 2 (1879) p. 412-414, pl. 60, figs. 1-4, pl. 106, figs. 4-7, pl. 107, figs. 2-5, pl. 109, figs. 1, 2—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 442-443, text figs.—UDDEN, Iowa Geol. Survey, vol. 9 (1899) p. 283—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 331.

Nephriticeras bucinum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 300; Am. Phil. Soc., Pr., vol. 32 (1894) p. 533-534—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 85, text fig. 1303—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 119, 168, 236, 240—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 191-192—WILLARD, Pa. Geol. Survey, 4th ser., Bull. G4 (1932) p. 40; Am. Jour. Sci., 5th ser., vol. 24 (1932)

p. 148—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 52-54, pl. 9, figs. 1, 2.

Nautilus (Nephriticeras) bucinum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 612-613.

Marcellus and Hamilton: New York and Pennsylvania; and possibly the Hamilton of Maryland and Ontario and the Cedar Valley of Iowa.

Nephriticeras cavum (Hall)

Nautilus cavus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 416-417, pl. 106, figs. 1-3.

Nephriticeras cavum HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 534—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192.

Hamilton: Cumberland, Md.

Nephriticeras (Nautilus) cornulum (Hall) = **Rhadinoceras cornulum**

Nephriticeras expansum (Kindle)

Cyrtoceras expansum KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 743, pl. 26, fig. 1.

Jeffersonville: Bunker Hill, Ind.

Nephriticeras hindshawi Ehlers and Hussey = **Lyrioceras hindshawi**

Nephriticeras inelegans (Meek) = **Gigantoceras inelegans**

Nephriticeras juvenis (Hall) = **Nephriticerina juvenis**

Nephriticeras? lawsii (Swallow)

Nautilus? lawsii SWALLOW, St. Louis Acad. Sci., Tr., vol. 1 (1860) p. 658—BRANSON, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1924) p. 124.

Snyder Creek?: Callaway Co., Mo.

Nephriticeras liratum (Hall) = **Lyrioceras liratum**

Nephriticeras magister (Hall)

Nautilus Barrandi HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 62, fig. 1, pl. 63, fig. 1, pl. 64A, fig. 2. [Not *Nautilus Barrandi* VON HAUER, 1850.]

Nautilus magister HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 422-424, pl. 62, fig. 1, pl. 107, figs. 1, 6, 7, 8, pl. 108, figs. 1, 2—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 292-294, pl. 28, fig. 1—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 131—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 17.

Nephriticeras magister HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 534—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 51-52.

Nautilus (Nephriticeras) magister CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 614.

Marcellus, Hamilton, and Tully: New York.

Nephriticeras maximum (Conrad)

Cyrtoceras maximum CONRAD, N. Y. Geol. Survey, Ann. Rept. 2 (1838) p. 111, 117.

Nautilus maximus HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 64, fig. 1, pl. 64A, fig. 1; Pal. N. Y., vol. 5, pt. 2 (1879) p. 418-420, pl. 63, fig. 1, pl. 64, fig. 1—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 739—SAVAGE, Ky. Geol. Survey, 6th ser., vol. 36 (1931) p. 230.

Nephriticeras maximum HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 535—GRABAU

and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 85-86, text fig. 1304—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192.

Nautilus (Nephriticeras) maximus CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 615.

Hamilton: New York; and possibly the Sellersburg at the Falls of the Ohio.

Nephriticeras oriens (Hall)

Nautilus oriens HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 61, fig. 1; Pal. N. Y., vol. 5, pt. 2 (1879) p. 420-422, pl. 61, fig. 1, pl. 105, fig. 2, pl. 106, fig. 8—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Barrandeoceras oriens FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 84-85.

Nephriticeras oriens HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 535—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192.

Nautilus (Nephriticeras) oriens CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 615-616.

Hamilton: Schoharie Co., N. Y.

Nephriticeras? numa (Billings)

Gyroceras Numa BILLINGS, Can. Nat., new ser., vol. 7 (1874) p. 238—WHITEAVES, Ottawa Nat., vol. 12 (1898) p. 127.

Gomphoceras numa STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 248.

Onondaga: southeastern Ontario.

Nephriticeras subliratum (Hall) = *Lyrioceras subliratum*

NEPHRITICERINA Foerste (Rhadinoceratidae)

GENOTYPE: *Nephriticerina alpenensis* Foerste

Nephriticerina FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 194-195; Univ. Mich., Mus. Pal., Contr., vol. 3 (1930) p. 151—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 54.

Nephriticerina alpenensis Foerste

Nephriticerina alpenensis FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 195-196, pl. 1, figs. 1A, 1B, pl. 2, fig. 1, pl. 5, fig. 5; Univ. Mich., Mus. Pal., Contr., vol. 3 (1930) p. 151-153, text figs. 1A, 1B, pl. 1, figs. 1A, 1B.

Alpena: Alpena, Mich.

Nephriticerina? bela (Billings)

Cyrtoceras Belus BILLINGS, Can. Jour. Industry, Sci., and Arts, new ser., vol. 6 (1861) p. 361-362.

Middle Devonian: Haldimand Co., Ontario.

Nephriticerina hyatti (Hall)

Nautilus hyatti HALL, N. Y. Assembly Doc. 105 (1886) pl. (126) 11, fig. 1—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 37-38, pl. 126, fig. 1—CLARKE, N. Y. State Geol., Ann. Rept. 13 (1894) p. 168.

Rhadinoceras hyatti HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 531.

Nautilus (Nephriticeras) hyatti CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 613.

Nephriticerina hyatti FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 195.

Hamilton: Cumberland, Md., and Livonia, N. Y.

Nephriticerina juvenis (Hall)

Gyroceras liratum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 57, figs. 5, 6 [not pl. 58, figs. 1, 2, pl. 60, figs. 8, 9].

Nautilus liratus juvenis HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 411-412, pl. 56, figs. 5, 6—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 445, text figs.

Nephriticerias juvenis HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 532.

Nautilus (Nephriticerias) juvenis CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 613.

Nephriticerina juvenis FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 195.

Hamilton: Cazenovia, N. Y., and Monroe Co., Pa.

Nephriticerina metula (Hall)

Cyrtoceras metula HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 44; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 72, pl. 9, fig. 7; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 46, figs. 1, 2—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 69, 168, 195—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Cyrtoceras (Gomphoceras) metula HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 360-361, pl. 47, figs. 1, 2, pl. 114, fig. 11.

Cyclostomiceras metula GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 122, text fig. 1363—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 140, 248.

Clostomiceras metula? STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 142. [Obviously a misprint and was intended to read *Cyclostomiceras metula?*.]

Onondaga: New York, Ontario, and Ohio.

Nephriticerina? nevadensis (Walcott)

Cyrtoceras Nevadense WALCOTT, U. S. Geol. Survey, Mon. 8 (1884) p. 203, pl. 17, figs. 7, 7a.

Nevada: Eureka district, Nevada.

Nephriticerina occidentalis (Whiteaves)

Cyrtoceras occidentale WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 103-104, pl. 7, figs. 5-6; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 345—TYRRELL, Can. Geol. Survey, Ann. Rept. 5, sec. E (1892) p. 163—KINDLE, Ottawa Nat., vol. 26 (1912) p. 110—MACLEAN, Int. Geol. Cong., Twelfth, Guide Book 8 (1913) p. 365—KINDLE, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 255.

Manitoba: Lake Winnipegosis, Manitoba.

OFFLEYOCERAS Foerste (Psuedorthoceratidae)

GENOTYPE: *Orthoceras arcticum* Foord

Offleyoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 315.

Offleyoceras arcticum (Foord)

Cyrtoceras sp. ETHERDIGE, Geol. Soc. London, Quart. Jour., vol. 34 (1878) p. 608.

Orthoceras arcticum FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 38-40, text figs. 3a-3d—BASSLER, U. S. Nat. Mus., Bull. 92 (1915) p. 901.

Monocyrtoceras? arcticum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 100-102, pl. 6, fig. 1.

Offleyoceras arcticum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 316-317, pl. 75, fig. 4; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 68.

Lower Devonian?: Offley Island, Arctic America.

Ompliomerocheras (*Proboloceras*) *inyx* (Clarke) = *Eobeloceras inyx*

Oncoceras dilatatum Hall = *Acleistoceras? dilatatum*

Oncoceras ovoides Hall = *Brevioceras? ovoides*

ORMOCERAS Stokes (Sactoceratidae)

GENOTYPE: *Ormoceras bayfieldi* Stokes

Ormoceras STOKES, Geol. Soc. London, Pr., vol. 2 (1838) p. 689; Geol. Soc. London, Tr., 2d ser., vol. 5 (1840) p. 709—WOODWARD, Manual of the Mollusca, pt. 1 (1851) p. 88, text fig. 48—HALL, Pal. N. Y., vol. 2 (1852) p. 95—SAEMANN, Palaeontographica, vol. 3 (1854) p. 146–156—BARRANDE, Neues Jahrb. f. Min., Geol. u. Pal. (1855) p. 400—EMERSON, Am. Geol., vol. 1, pt. 2 (1855) p. 150—BARRANDE, Soc. géol. France, Bull., sér. 2, tome 12, pt. 1 (1855) p. 470—BILLINGS, Can. Geol. Survey, Rept. Progress for 1853–1856 (1857) p. 326, 328—CHAPMAN, Can. Jour., new ser., vol. 8 (1863) p. 20; Expos. Min. Geol. Can. (1864) p. 128—BARRANDE, Syst. Sil. du Centre Bohême, vol. 2, pt. 3 (1874) p. 765—HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 272—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 368—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 445—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 528, text fig. 1079; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 609, text fig. 1128—BROILL, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 520, text fig. 1090—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1924) p. 22, 26, 62–63; Rept. Sci. Results of the Norwegian Expedition to Novaya Zemlya 1921, no. 31 (1925) Det Videnskaps-Akademi i Oslo, p. 13–17—TROEDSSON, Jubilaeumskepeditionen Nord om Groenland 1920–1923, Nr. 1 (Saertryk af Meddelelser om Groenland, 71) [also issued as Comm. pal. no. 25 of the Mus. de min. et de géol. de l'Univ. Copenhague] (1926) p. 104–106—FOERSTE, Can. Geol. Survey, Mem. 154 (1927) p. 291–293; Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 71–73; Denison Univ. Bull., Jour. Sci. Lab., vol. 24 (1929) p. 208—TEICHERT, Pal. Zeitschr., Bd. 12 (1930) p. 290—FOERSTE and TEICHERT, Denison Univ. Bull., Jour. Sci. Lab., vol. 25 (1930) p. 287.

Ormoceras atreus (Hall)

Orthoceras atreus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 305–306, pl. 88, fig. 1, pl. 89, figs. 10, 11—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 618—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 23—BRANSON, Mo. Bur. Geol. and Mines, 2d ser., vol. 17 (1923) p. 124, pl. 30, fig. 3—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312, 318, 321.

Genesee, Naples, and Chemung: New York; and possibly the Snyder Creek of Missouri.

Ormoceras bebryx (Hall)

Orthoceras bebryx HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 39, figs. 2 [not 1]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 275–276, pl. 38, fig. 10, pl. 39, fig. 2, pl. 83, fig. 14, pl. 84, figs. 11, 12—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 618–619—WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 8—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 31; N. Y. State Mus., Bull. 137 (1910) p. 30—CLELAND, Wis. Geol. and Nat. Hist. Survey, Bull. 21 (1911) p. 19, 135, pl. 43, figs. 1, 2—OLSSON, Am. Jour. Sci., 4th ser., vol. 33 (1912) p. 446—WILLIAMS [Kindle], U. S. Geol. Survey, Prof. Paper 79 (1913) p. 20—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 67, 77, 81, 108, 307–308, pl. 38, figs. 10–12—WILLIAMS, Ontario Bur. Mines, Ann. Rept. 29 (1920) p. 25—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 317—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 806, 859.

Orthoceras typum? HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda, pl. 38, fig. 10. [Not *Orthoceras typus* Saemann, 1854.]

Orthoceras berryx FENTON, Am. Jour. Sci., 4th ser., vol. 48 (1919) p. 373. [Obviously a misprint and was intended to read *Orthoceras bebryx*.]

Loxoceras bebryx FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 13.

Hamilton, Tully, and Naples: New York; and possibly the Milwaukee of Wisconsin, the Hackberry of Iowa, the Onondaga of Ontario, and the Romney of Maryland and West Virginia.

Ormoceras bebryx cayuga Hall

Orthoceras bebryx HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 39, fig. 1 [not 2].

Orthoceras bebryx cayuga HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 276-277, pl. 39, fig. 1, pl. 86, figs. 3-5, pl. 91, figs. 1-5, pl. 92, figs. 1-5—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 1 (1888) p. 98-99—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 619-620—LUTHER, N. Y. State Mus., Bull. 137 (1910) p. 31—PROSSER, Ohio Geol. Survey, 4th ser., Bull. 15 (1912) p. 80—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Naples: New York; and possibly the upper Chagrin at Bedford, Ohio.

Ormoceras brevicameratum Foerste

Ormoceras brevicameratum FOERSTE, Can. Geol. Survey, Bull. 49 (1928) p. 12-13, text figs. 3J, 3M.

Lower Devonian: Clementsvale, Nova Scotia.

Ormoceras densum

Cyrtoceras densum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 363, pl. 85, figs. 17-19.

Romney: Cumberland, Md.

Ormoceras? desideratum (Hall)

Orthoceras clavatum HALL, Pal. N. Y., vol. 3 (1859) p. 345, pl. 71, fig. 4—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320. [Not *Orthoceras clavatum* HALL, 1852.]

Orthoceras [sp.] HALL, Pal. N. Y., vol. 3 (1859) p. 376.

Orthoceras desideratum HALL, in MILLER, The American Palaeozoic fossils, A catalogue of the genera and species, . . . , ed. 2 (1877) p. 245—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 624.

Coeymans: Schoharie, N. Y.

Ormoceras expositum (Hall)

Orthoceras expositum HALL, N. Y. Assembly Doc. 105 (1886) pl. (118) 2, fig. 2—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 29, pl. 118, fig. 2.

Loxoceras? expositum CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 324.

Canadaway: Austinville, Pa.

Ormoceras? fluctum (Hall)

Orthoceras fluctum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 239-240, pl. 76, figs. 4-7—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 626—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 51—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Schoharie: Schoharie and Albany counties, N. Y.; and possibly the Tully of New York.

Ormoceras jaculum (Hall)

Orthoceras molestum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, fig. 8 [not 6, not pl. 37, fig. 1].

Orthoceras jaculum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 266-267, pl. 35, fig. 12.

Onondaga: Clarence Hollow, Erie Co., N. Y.

Ormoceras kindlei Foerste

Ormoceras kindlei FOERSTE, Can. Geol. Survey, Bull. 49 (1928) p. 9-11, text figs. A, A₁, B.

Lower Devonian: Clementsvale, Nova Scotia.

(Ormoceras leander (Hall))

Orthoceras leander HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 309-310, pl. 90, figs. 6-8—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 627—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 317, 331.

Orthoceras (Geisonoceras) leander GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 53.

Naples and Conewango: New York and Pennsylvania.

(Ormoceras longicameratum (Hall))

Orthoceras longicameratum HALL, Pal. N. Y., vol. 3 (1859) p. 343-344, pl. 70, fig. 1, pl. 71, figs. 1-5—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 542, text fig.—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 320—CLARKE, N. Y. State Mus., Mem. 9, pt. 2 (1909) p. 13, 21, pl. 1, fig. 9—OHERN and MAYNARD, Md. Geol. Survey, Lower Devonian (1913) p. 130, 487, pl. 88, figs. 1-3.

Coeymans: New York; and possibly the Helderberg of Maryland and Pennsylvania and the Dalhousie of New Brunswick.

(Ormoceras luxum (Hall))

Orthoceras luxum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, fig. 5; Pal. N. Y., vol. 5, pt. 2 (1879) p. 244-248, pl. 35, figs. 4-7, pl. 76, fig. 1, pl. 77, figs. 1-8, pl. 78, figs. 5-7, pl. 78B, fig. 3, pl. 81, fig. 13, pl. 112, figs. 12-14—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 628-630—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 187, 327, text fig. 109.

Orthoceras pelops [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 35, figs. 1-3 [not 2, not pl. 37, figs. 8, 9].

Loxoceras luxum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 113, text fig. 1347—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 13—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 16.

Schoharie: Schoharie and Albany counties, N. Y.

(Ormoceras novascoticum Foerste)

Ormoceras novascoticum FOERSTE, Can. Geol. Survey, Bull. 49 (1928) p. 11-12, text fig. 3B.

Lower Devonian: Clementsvale, Nova Scotia.

(Ormoceras oppletum (Hall))

Orthoceras oppletum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 248-249, pl. 81, figs. 9-12, pl. 112, fig. 11—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 634—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

(Ormoceras palmatum (Hall))

Orthoceras palmatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 312-313, pl. 90, figs. 9, 10—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 634.

Chemung: southwestern New York.

(Ormoceras rudicula (Hall))

Orthoceras rudicula HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 37, fig. 7; Pal. N. Y., vol. 5, pt. 2 (1879) p. 268-269, pl. 37, fig. 2, pl. 112, figs. 1, 2.

Middle? Devonian: Stafford, N. Y.

Ormoceras? vastator (Hall)

Orthoceras obliquum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 243-244, 264, 480.
[Not *Orthoceras obliquum* EICHWALD, 1860.]

Orthoceras vastator HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 264, 480, pl. 78, figs. 1-4—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 646—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Schoharie: Schoharie and Albany counties, N. Y.

Ormoceras winchelli (Meek and Worthen)

Orthoceras winchelli MEEK and WORTHEN, Philadelphia Acad. Nat. Sci., Pr. (1866) p. 257; Ill. Geol. Survey, vol. 6 (1875) p. 512-513, pl. 28, fig. 1—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 169—GRABAU [STAUFFER], Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Columbus: central Ohio.

Orthoceras aciculoides Clarke = **Michelinoceras? aciculoides**

Orthoceras aciculum Hall = **Bactrites? aciculum**

Orthoceras aedipus Hall [Luther] = **Kionoceras oedipus**

Orthoceras aegea Hall = **Spyroceras aegea**

Orthoceras (Spyroceras) aegea Hall = **Spyroceras aegea**

Orthoceras algomense Parks = **Michelinoceras? algomense**

Orthoceras anax Billings = **Michelinoceras? anax**

Orthoceras anguis Hall = **Geisonoceras anguis**

Orthoceras aff. O. anguliferum (d'Archiac and de Verneuil) [Kindle] = **Michelinoceras aff. M.? anguliferum**

Orthoceras anguliferum alpenense Foerste = **Michelinoceras? anguliferum alpenense**

Orthoceras annulatum americanum Foord [part] = **Dawsonoceras americanum**

Orthoceras aptum Hall = **Diagoceras aptum**

Orthoceras arenosum Hall = **Spyroceras arenosum**

Orthoceras arcticum Foord = **Offleyoceras arcticum**

Orthoceras arkonense Whiteaves = **Michelinoceras? arkonense**

Orthoceras atreus Hall = **Ormoceras atreus**

Orthoceras aulax Hall = **Geisonoceras aulax**

Orthoceras baculum Hall = **Michelinoceras? stylus** and **M.? viator**

Orthoceras bebryx Hall = **Ormoceras bebryx** and **O. bebryx cayuga**

Orthoceras bebryx cayuga Hall = **Ormoceras bebryx cayuga**

Orthoceras berryx Hall [Fenton] = **Ormoceras bebryx**

Orthoceras bipartitum Hall = **Spyroceras bipartitum**

Orthoceras caelamen Hall = **Spyroceras caelamen**

Orthoceras (Spyroceras) caelamen Hall = **Spyroceras caelamen**

Orthoceras caldwellense Miller and Gurley = **Spyroceras caldwellense**

Orthoceras carnosum Hall = **Geisonoceras? carnosum**

Orthoceras cingulum Hall = **Michelinoceras? cingulum**

Orthoceras clarkei Cleland = **Michelinoceras? clarkei**

Orthoceras clavatum Hall [part] = **Ormoceras? desideratum**

Orthoceras cochleatum Hall = **Bradfordoceras warrenense**

Orthoceras collatum Hall = **Michelinoceras? collatum**

Orthoceras consortale Hall = **Bradfordoceras consortale**

Orthoceras constrictum Conrad [not Vanuxem] = **Spyroceras? constrictum**

Orthoceras constrictum Vanuxem [not Conrad] = **Michelinoceras uniconstrictum**
and **M.? novboracense**

- Orthoceras creon* Hall = **Kionoceras creon**
Orthoceras (*Spyroceras*) *creon* Hall = **Kionoceras creon**
Orthoceras cretaceum (Whitfield) = **Acleistoceras? cretaceum**
Orthoceras crotalum Hall = **Spyroceras crotalum** and **S. caelamen**
Orthoceras (*Spyroceras*) *crotalum* Hall = **Spyroceras crotalum**
Orthoceras dagon Hall = **Michelinoceras? dagon**
Orthoceras darwini Billings [Foord] = **Kionoceras** cf. **K. myrice**
Orthoceras demus Hall = **Michelinoceras? demus**
Orthoceras desideratum Hall = **Ormoceras? desideratum**
Orthoceras directum Hall = **Michelinoceras? directum**
Orthoceras duramen Hall = **Michelinoceras? duramen**
Orthoceras emaceratum Hall = **Michelinoceras? emaceratum**
Orthoceras eriense Hall = **Michelinoceras? eriense**
Orthoceras erion Hall [Grabau] = **Orthoceras creon**
Orthoceras exile Hall = **Michelinoceras? exile**
Orthoceras expositum Hall = **Ormoceras expositum**
Orthoceras extremum Hall = **Michelinoceras? extremum**
Orthoceras fenestrulatum Clarke = **Protokionoceras fenestrulatum**
Orthoceras (**Kionoceras**) *fenestrulatum* Clarke = **Protokionoceras fenestrulatum**
Orthoceras filosum Clarke = **Geisonoceras filosum**
Orthoceras fluctum Hall = **Ormoceras? fluctum**
Orthoceras foliatum Hall = **Cyrtoceras eugenium**
Orthoceras fulgidum Hall = **Michelinoceras? fulgidum**
Orthoceras fustis Hall = **Palmeroceras fustis**
Orthoceras geneva Clarke = **Spyroceras geneva**
Orthoceras (*Spyroceras*) *geneva* Clarke = **Spyroceras geneva**
Orthoceras gracilium Winchell = **Michelinoceras? gracilium**
Orthoceras cf. *O. gregarium* Münster [Raymond] = **Michelinoceras? accelerans**
Orthoceras griffithi Houghton = **Michelinoceras? griffithi**
Orthoceras hagersvillense Whiteaves = **Geisonoceras hagersvillense**
Orthoceras (*Cyrtoceras?*) *hector* (Hall) = **Bradfordoceras sinuosum**
Orthoceras helderbergiae Hall = **Michelinoceras? helderbergiae**
Orthoceras hindii (Whiteaves) = **Bradfordoceras hindii**
Orthoceras hyas Hall = **Spyroceras thoas**
Orthoceras imbricatum Etheridge [part] = **Armenoceras coppingeri**
Orthoceras incarceratum Clarke = **Spyroceras incarceratum**
Orthoceras (*Spyroceras*) *incarceratum* Clarke = **Spyroceras incarceratum**
Orthoceras inoptatum Hall = **Protokionoceras inoptatum**
Orthoceras (**Kionoceras**) *inoptatum* Hall = **Protokionoceras inoptatum**
Orthoceras iowaense Miller = **Spyroceras iowaense**
Orthoceras jaculum Hall = **Ormoceras jaculum**
Orthoceras kingii Meek = **Michelinoceras? kingii**
Orthoceras laeve Hall = **Michelinoceras? sublaeve**
Orthoceras lambtonense Whiteaves = **Michelinoceras? lambtonense**
Orthoceras leander Hall = **Ormoceras leander**
Orthoceras (*Geisonoceras*) *leander* Hall = **Ormoceras leander**
Orthoceras lima Hall = **Spyroceras lima**
Orthoceras (*Spyroceras*) *lima* Hall = **Spyroceras lima**
Orthoceras linteum Hall = **Geisonoceras linteum**
Orthoceras longicameratum Hall = **Ormoceras longicameratum**
Orthoceras luxum Hall = **Ormoceras luxum**
Orthoceras marcellense Hall = **Striacoceras typum**

- Orthoceras* (*Kionoceras*) *marcellense* Hall = *Striacoceras typum*
Orthoceras masculum Hall = *Michelinoceras?* *masculum*
Orthoceras medium Hall = *Michelinoceras?* *medium*
Orthoceras mephisto Clarke = *Michelinoceras?* *mephisto*
Orthoceras molestum Hall = *Michelinoceras?* *molestum*, *Ormoceras jaculum*, and *Protokionoceras inoptatum*
Orthoceras montanense Raymond = *Michelinoceras?* *montanense*
Orthoceras multiannulatum Swartz and Maynard = *Spyroceras schucherti*
Orthoceras multicinctum Hall = *Spyroceras multicinctum*
Orthoceras (*Cycloceras*) *multicinctum* Hall = *Spyroceras multicinctum*
Orthoceras norumbegae Clarke = *Protokionoceras norumbegae*
Orthoceras nummularium Etheridge [not Sowerby] = *Armenoceras rotulatum*
Orthoceras nuntium Hall = *Spyroceras nuntium*, *S. idmon*, and *S. caelamen*
Orthoceras (*Spyroceras*) *nuntium* Hall = *Spyroceras nuntium*
Orthoceras nuntoides Clarke = *Spyroceras nuntoides*
Orthoceras (*Spyroceras*) *nuntoides* Clarke = *Spyroceras nuntoides*
Orthoceras obliquum Hall [not Eichwald] = *Ormoceras?* *obliquum*
Orthoceras oedipus Hall = *Kionoceras oedipus*
Orthoceras (*Spyroceras*) *oedipus* Hall = *Kionoceras oedipus*
Orthoceras ohioense Hall = *Michelinoceras?* *ohioense*
Orthoceras ommaneyi Salter = *Armenoceras ommaneyi*
Orthoceras ontario Clarke = *Spyroceras ontario*
Orthoceras ontarioense Foerste = *Michelinoceras?* *ontarioense*
Orthoceras oppletum Hall = *Ormoceras oppletum*
Orthoceras pacator Hall = *Michelinoceras?* *pacator*
Orthoceras palmatum Hall = *Ormoceras palmatum*
Orthoceras paradoxa Eaton [not Sowerby] = *Ryticeras trivolve*
Orthoceras parallelum Meek = *Michelinoceras?* *parallelum*
Orthoceras parliense Williams and Berger = *Michelinoceras?* *parliense*
Orthoceras pauciseptum Hall = *Michelinoceras?* *pauciseptum*
Orthoceras pelops Hall = *Michelinoceras?* *pelops* and *Ormoceras luxum*
Orthoceras pelops ohioense Hall = *Michelinoceras?* *ohioense*
Orthoceras (*Geisonoceras*) *pelops* Hall = *Michelinoceras?* *pelops*
Orthoceras perstriatum Hall = *Protokionoceras perstriatum*
Orthoceras pertextum Hall = *Spyroceras pertextum*
Orthoceras (*Spyroceras*) *pertextum* Hall = *Spyroceras pertextum*
Orthoceras pervicax Hall = *Michelinoceras?* *pervicax*
Orthoceras pravum Hall = *Michelinoceras?* *pravum*
Orthoceras princiana Williams and Berger = *Michelinoceras?* *princiana*
Orthoceras procerum Hall = *Michelinoceras?* *procerum*
Orthoceras procrus Hall = *Michelinoceras?* *procerum*
Orthoceras profundum Hall = *Kionoceras profundum*
Orthoceras (*Spyroceras*) *profundum* Hall = *Kionoceras profundum*
Orthoceras pulcher Parks = *Spyroceras pulcher*
Orthoceras pustulosum Winchell = *Michelinoceras?* *pustulosum*
Orthoceras rarum Hall [Grabau] = *Acleistoceras?* *varum*
Orthoceras rigidum Hall = *Michelinoceras?* *rigidum*
Orthoceras robustum Hall = *Michelinoceras?* *eriense*
Orthoceras rudens Hall = *Spyroceras rudens*
Orthoceras (*Cycloceras*) *rudens* Hall = *Spyroceras rudens*
Orthoceras rudicula Hall = *Ormoceras rudicula*
Orthoceras rudis Hall = *Michelinoceras?* *rude*

- Orthoceras sceptrum* Hall = *Michelinoceras?* *sceptrum*
Orthoceras? *scheii* Foerste = *Michelinoceras?* *scheii*
Orthoceras schucherti Maynard = *Spyroceras schucherti*
Orthoceras scintilla Hall = *Michelinoceras?* *scintilla*
Orthoceras scintilla mephisto Clarke = *Michelinoceras?* *mephisto*
Orthoceras sicinus Hall = *Spyroceras sicinus*
Orthoceras sirpus Hall = *Michelinoceras?* *sirpus*
Orthoceras spissum Hall = *Michelinoceras?* *spissum*
Orthoceras staffordense Clarke = *Spyroceras staffordense*
Orthoceras (*Kionoceras*) *staffordense* Clarke = *Spyroceras staffordense*
Orthoceras stylus Hall = *Michelinoceras?* *stylus*
Orthoceras (*Protobactrites*) *stylus* Hall = *Michelinoceras stylus*
Orthoceras sublaeve d'Orbigny = *Michelinoceras?* *sublaeve*
Orthoceras subtextile Hall = *Geisonoceras subtextile*
Orthoceras subulatum Hall = *Michelinoceras?* *subulatum* and *Spyroceras sicinus*
Orthoceras (*Geisonoceras*) *subulatum* Hall = *Michelinoceras?* *subulatum*
Orthoceras subulatum pygmaeum Loomis = *Michelinoceras?* *subulatum pygmaeum*
Orthoceras tantalus Hall = *Michelinoceras?* *tantalus*
Orthoceras telamon Hall = *Michelinoceras?* *telamon*
Orthoceras tenere Hall = *Michelinoceras?* *tenere*
Orthoceras tenuiannulatum Hall = *Spyroceras tenuiannulatum*
Orthoceras tersum Hall = *Michelinoceras?* *tersum*
Orthoceras tetricum Hall = *Michelinoceras?* *tetricum* and *M.?* *pravum*
Orthoceras textum Hall = *Geisonoceras textum*
Orthoceras thestor Hall = *Spyroceras thestor*
Orthoceras (*Cycloceras*) *thestor* Hall = *Spyroceras thestor*
Orthoceras thoas Hall = *Spyroceras thoas*
Orthoceras (*Dawsonoceras*) *thoas* Hall = *Spyroceras thoas*
Orthoceras troas Hall [Williams] = *Spyroceras troas*
Orthoceras trusitum Clarke and Ruedemann = *Protokionoceras trusitum*
Orthoceras typum Saemann = *Striacoceras typum*, *Diagoceras aptum*, and *Ormoceras*
bebryx
Orthoceras (*Thoracoceras*) *tyrrellii* Whiteaves = *Casteroceras tyrrellii*
Orthoceras undulatum Hall [not Sowerby; not Owen] = *Dawsonoceras americanum*
Orthoceras undulatum Owen [not Hall; not Sowerby] = *Spyroceras iowaense*
Orthoceras uniconstrictum Miller = *Michelinoceras?* *uniconstrictum*
Orthoceras varum Hall = *Acleistoceras?* *varum*
Orthoceras vastator Hall = *Ormoceras?* *vastator*
Orthoceras viator Hall = *Michelinoceras?* *viator*
Orthoceras vicinus Hall [Grabau] = *Spyroceras sicinus*
Orthoceras walpolense Whiteaves = *Spyroceras walpolense*
Orthoceras warrenense Miller = *Bradfordoceras warrenense*
Orthoceras winchelli Meek and Worthen = *Ormoceras winchelli*
Orthoceras zeus Hall = *Michelinoceras?* *zeus*

OVOCERAS Flower (Poterioceratidae)

GENOTYPE: *Gomphoceras* (*Apioceras*) *oviforme* Hall

Ovoceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 64-65; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 32-33, 73.

Ovoceras constrictum Flower

Gomphoceras oviforme [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 344-346, pl. 94, figs. 6, 7 [not pl. 45, figs. 1-4, pl. 46, figs. 6, 7.]

Ovoceras constrictum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 66-68, pl. 8, figs. 4, 5; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 7, 16, 33, 34, 73.

Cherry Valley member of Marcellus: Schoharie, Stockbridge, and Manlius, N. Y.

Ovoceras? gibbosum* (Hall) = *Micronoceras gibbosum

***Ovoceras? minimum* (Hall)**

Gomphoceras minimum HALL, N. Y. Assembly Doc. 105 (1886) pl. (122) 7, fig. 4—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 34, pl. 122, fig. 4—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 740, pl. 25, fig. 3.

Poterioceras minimum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 129-130.

Ovoceras? minimum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 75.

Sellersburg: Falls of the Ohio.

***Ovoceras oviforme* (Hall)**

Gomphoceras (Apioceras) oviforme HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 105.

Gomphoceras oviforme [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 45, figs. 1, 2; Pal. N. Y., vol. 5, pt. 2 (1879) p. 344-346, pl. 45, figs. 1-4 [not pl. 46, figs. 6, 7, pl. 94, figs. 6, 7]—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1901) p. 740-741—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—ROWLEY, in G. K. GREENE'S Contr. to Ind. Pal., pt. 7 (1901) p. 59, pl. 21, figs. 13, 14—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 592-593—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 209, 211, 329, text fig. 155—SAVAGE, Ky. Geol. Survey, 6th ser., vol. 36 (1931) p. 232.

Poterioceras oviforme GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 129, text fig. 1376.

Ovoceras oviforme FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 65-66; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 16, 32, 33, 34, 73.

Cherry Valley limestone member of Marcellus: Schoharie and Manlius, N. Y.; and possibly the Sellersburg at the Falls of the Ohio.

***Ovoceras turbiniforme* (Meek and Worthen)**

Gomphoceras (Apioceras) turbiniforme MEEK and WORTHEN, Philadelphia Acad. Nat. Sci., Pr. (1866) p. 258.

Gomphoceras turbiniforme MEEK and WORTHEN, Ill. Geol. Survey, vol. 3 (1868) p. 444, pl. 12, figs. 2a, 2b—HALL and WHITFIELD, Description of new species of fossils from the vicinity of Louisville, Kentucky, and the Falls of the Ohio [advance publication] (1872) p. 13; N. Y. State Mus., Ann. Rept. 24 (1872) p. 200—BUTTS, Ky. Geol. Survey, 4th ser., vol. 3, pt. 2 (1915) p. 128, pl. 45, fig. 11—MILLER, Ky. Dept. Geol. and Forestry, 5th ser., Bull. 2 (1919) pl. 44, fig. 11—SAVAGE, Ky. Geol. Survey, 6th ser., vol. 33 (1930) p. 10, 97, pl. 4, fig. 11; Ky. Geol. Survey, 6th ser., vol. 36 (1931) p. 232.

Poterioceras turbiniforme GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 129.

Ovoceras turbiniforme FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 33.

Sellersburg: Indiana and Kentucky.

PACHTOCERAS Foerste (Poterioceratidae)

GENOTYPE: *Gomphoceras rotundum* Pacht

Pachtoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 328, pl. 44, figs. 2A-2C—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 58-59.

Pachtoceras obliquum Flower

Pachtoceras obliquum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 59-60, pl. 2, figs. 23-25.

Lewis Run sandstone member of Venango: Lewis Run, Pa.

PALMERO CERAS Flower (Pseudorthoceratidae)

GENOTYPE: *Orthoceras fustis* Hall

Palmeroceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 58-59.

Palmeroceras fustis (Hall)

Orthoceras fustis HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 281-282, pl. 83, fig. 11, pl. 113, figs. 16, 17—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 626—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Palmeroceras fustis FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 59-60, pl. 2, fig. 4, pl. 4, figs. 1, 2, pl. 7, fig. 3.

Cherry Valley limestone member of Marcellus: Schoharie, N. Y.

PARACLEISTOCERAS Foerste (Poterioceratidae)

GENOTYPE: *Phragmoceras devonicans* Barrande

Paracleistoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 335-336—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 11.

Paracleistoceras canadense (Stauffer)

Poterioceras canadensis STAUFFER, Jour. Geol., vol. 26 (1918) p. 556, pl. 1, figs. 2-5.

Onondaga: Gorrie, Ontario.

Paralegoceras? milleri Flower and Caster = **Sporadoceras milleri**

PARODOCERAS ["*PARODICERAS*"] Hyatt =
TORNO CERAS (*PARODOCERAS*)

Parodoceras ["*Parodiceras*"] **discoideum** (Hall) = **Tornoceras** (**Parodoceras**) **discoideum** and **Tornoceras** (**Tornoceras**) **uniangulare**

Parodoceras? peracutum (Hall) = **Tornoceras** (**Tornoceras**) **peracutum**

PERNO CERAS Schindewolf = *TORNO CERAS* (*PROTORNO CERAS*)

Phragmoceras spinosum Conrad = **Cophinoceras spinosum**

Phragmoceras walshii Meek and Worthen = **Acleistoceras? walshii**

PLATYCLYMENIA Hyatt (Platyclymenidae)

GENOTYPE: *Clymenia annulata* Münster

Platyclymenia HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 314—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 413—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 18—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 548—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 133—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 628—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 5—WEDEKIND, K. Ges. Wiss. Göttingen, Abh., Math.-Phys. Klasse, N. F., Bd. 10, Nr. 1 (1914) p. 33—SCHINDEWOLF, Senckenbergiana, Bd. 4 (1922) p. 193-194; Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 444-446; Centr. f. Min., Geol. und Pal., Jahrg. 1923 (1923) p. 26, 61, 62, 63—SCHMIDT, Preuss. geol. Landes., Jahrb., Bd. 44 (1924) p. 124—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 547—MATERN,

Preuss, geol. Landes., Abh., N. F., Heft 134 (1931) p. 98—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B, p. 340-344—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 194-196.

Trigonoclymenia SCHINDEWOLF (subgenus), Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B, p. 341-343—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 195. [Genotype, *Clymenia spinosa* Münster.]

Pleuroclymenia SCHINDEWOLF (subgenus), Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B, p. 343-344—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 195. [Genotype, *Platyclymenia crassa* Schindewolf.]

Platyclymenia americana = Platyclymenia (Pleuroclymenia) americana

Platyclymenia (Pleuroclymenia) americana (Raymond)

Clymenia (Platyclymenia) americana RAYMOND, Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 118, text fig. 1.

Platyclymenia americana RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 150-151, text fig. 1, pl. 6, figs. 10-13, pl. 7, figs. 2, 3 [not 1]—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 133-134, text fig. 1385—RAYMOND, Int. Zool. Cong., Seventh, Pr., advance print (1910) p. 3; Int. Zool. Cong., Seventh, Pr. (1912) p. 743—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 27.

Platyclymenia (Pleuroclymenia) americana SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 340-344, text figs. 10, 11—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 49 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 196-199, text fig. 41A, pl. 39, figs. 1-7.

Three Forks: Three Forks, Montana.

Platyclymenia polypleura Raymond = **Platyclymenia (Pleuroclymenia) americana**

Platyclymenia (Pleuroclymenia) polypleura Raymond

Clymenia sp. RAYMOND [HOLZAPFEL], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 118, 119.

Platyclymenia polypleura RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 151-152, text fig. 2, pl. 7, figs. 4-6—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 27.

Platyclymenia sp. RAYMOND, Int. Zool. Cong., Seventh, Pr., advance print (1910) p. 2; Int. Zool. Cong., Seventh, Pr. (1914) p. 742.

Platyclymenia (Pleuroclymenia) polypleura SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 344-345—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 50 (1936); Geol. Soc. Am., Spec. Paper 14 (1938) p. 198-199, pl. 39, figs. 11-16.

Three Forks: Three Forks, Montana.

PLEUROCLYMENIA Schindewolf = **PLATYCLYMENIA**
(**PLEUROCLYMENIA**)

Pleuronautilus inopinatus (Hall) = **Diadiploceras inopinatum**

POLONOCERAS Dybczyński = **TORNOCERAS (POLONOCERAS)**

POLYCRONITES Troost (Ryticeratidae)

GENOTYPE: *Polycronites haanii* Troost

Polycronites TROOST, Fifth geol. rept. to Twenty-third General Assembly of Tenn., appd. (1840) p. 50-51.

Ryticeras RUEDEMANN and GOLDRING, N. Y. State Mus., Bull. 288 (1931) p. 78, text fig. 13. [Not *Ryticeras* HYATT.]

Polycronites haanii Troost

Polycronites Haanii TROOST, Fifth geol. rept. to Twenty-third General Assembly of Tenn., appd. (1840) p. 50-51.

Gyroceras? Haanii MILLER, The American Palaeozoic fossils, A catalogue of the

genera and species . . . , ed. 2 (1877) p. 178; North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 453.

Devonian: Harpeth Ridge, Davidson Co., Tenn., and near Columbus, Ohio.

PONTICERAS Matern (Manticoceratidae)

GENOTYPE: *Ammonites aequabilis* Beyrich

Ponticeras MATERN, Senckenbergiana, Bd. 11 (1929) p. 151; Preuss. Geol. Landes., Abh., N. F., Heft 134 (1931) p. 79—SCHINDEWOLF, Preuss. geol. Landes., Jahrb., Bd. 58 (1937) p. 243, 244, 249—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 70.

***Ponticeras stainbrooki* Miller**

Ponticeras stainbrooki MILLER, Pan-Am. Geol., vol. 65 (1936) p. 336 [*nomen nudum*]; Iowa Acad. Sci., Pr., vol. 43 (1938) p. 231, pl. 1, figs. 5-8 [*nomen nudum*]; Geol. Soc. Am., Spec. Pap. 14 (1938) p. 71, pl. 27, figs. 1-4.

Independence shale: Brandon, Iowa.

- Porcellia? rotatoria* Hall = *Werneroceras plebeiforme***
Poterioceras ajax* (Hall) = *Acleistoceras? ajax
Poterioceras amphora* (Whitfield) = *Acleistoceras? amphora
Poterioceras canadense* Stauffer = *Paracleistoceras canadense
Poterioceras clavatum* (Hall) = *Verticoceras? clavatum
Poterioceras conradi* (Hall) = *Verticoceras conradi
Poterioceras eximium* (Hall) = *Acleistoceras eximium
Poterioceras giganteum* Savage = *Acleistoceras? giganteum
Poterioceras hyatti* (Whitfield) = *Acleistoceras hyatti
Poterioceras lunatum* (Hall) = *Cyrtogomphus lunatus
Poterioceras? manes* (Hall) = *Brevioceras? manes
Poterioceras minimum* (Hall) = *Ovoceras? minimum
Poterioceras nasutum* (Hall) = *Anglicornus nasutum
Poterioceras raphanus* (Hall) = *Micronoceras raphanus
Poterioceras oviforme* (Hall) = *Ovoceras oviforme
Poterioceras tumidum* (Hall) = *Anglicornus? tumidum
Poterioceras turbiniforme* (Meek and Worthen) = *Ovoceras turbiniforme

POTERIOCERINA Foerste (Poterioceratidae)

GENOTYPE: *Cyrtoceras lumbosum* Barrande

Poteriocerina FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 343; pl. 45, figs. 1, 2—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 70; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 11, 12, 38, 46, 55, 56-57, 72.

***Poteriocerina manitobensis* (Whiteaves)**

Gomphoceras manitobense WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 102-103, pl. 7, figs. 7, 7a; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 344-345—MCLEAN, Int. Geol. Cong., Twelfth, Guide Book 8 (1913) p. 365—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 56-57, 72.

Devonian (Winnipegosis?): near Lake Winnipegosis, Manitoba.

***Poteriocerina solida* (Hall)**

Gomphoceras solidum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 338, pl. 93, fig. 9—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 594.

Potocerina solidum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 70-72, pl. 9, figs. 8-10; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 56, 72.

Cherry Valley limestone member of Marcellus: New York.

PROBELOCERAS Clarke (Manticoceratidae)

GENOTYPE: *Goniatites lutheri* Clarke

Proboloceras CLARKE, N. Y. State Mus., Ann. Rept. 50, vol. 2 (1899) p. 90 [also issued as N. Y. State Geol., Ann. Rept. 16]—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 298—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 550—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 60—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 138—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 131—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 551—MILLER, Geol. Soc. Am., Spec. Paper 14 (1938) p. 63.

Proboloceras lutheri (Clarke)

(?) *Clymenia? complanata* HALL, Geol. N. Y., pt. IV, Comprising the survey of the fourth geological district (1843) p. 244, text fig. 106 (5); Descriptions of new species of fossils from the upper Helderberg, Hamilton, and Chemung groups (1861) p. 35; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 63—CLARKE, Am. Jour. Sci., 3d ser., vol. 43 (1892) p. 57.

(?) *Clymenia Erato* HALL, Descriptions of new species of fossils from the upper Helderberg, Hamilton, and Chemung groups (1861) p. 36; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862); p. 64, pl. 10, fig. 1; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 70, figs. 6, 7—CLARKE, Am. Jour. Sci., 3d ser., vol. 43 (1892) p. 57.

(?) *Goniatites complanatus* HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 1; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 132; Pal. N. Y., vol. 5, pt. 2 (1879) p. 455-457, pl. 70, figs. 6, 7, 10, 11 [not 8, 9]—CLARKE, U. S. Geol. Survey, Rept. P4 (1885) p. 20, 47-48—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1889) p. 28—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 255, text fig.—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 8 (1889) p. 298-299, text fig. 234—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

(?) *Goniatites (Clymenia?) complanatus* HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 70, figs. 10, 11 [not 8, 9].

(?) *Gephuroceras (Goniatites) complanatum* [part] HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 317.

Goniatites lutheri CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 50, pl. 2, fig. 8—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 256, text fig.—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

(?) *Goniatites erato* MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 439.

Proboloceras lutheri CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53, 79, 80; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53, 79, 80; N. Y. State Geol., Ann. Rept. 16 (1899) p. 90-102, text figs. 68-77, pl. 7, figs. 1-10 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 648-649—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 58, 61, 62—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 357, 358, 361, 366, 372, 373, 379, 380; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 357, 358, 361, 366, 372, 373, 379, 380—KINDLE, Jour. Geol., vol. 14 (1906) p. 633—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 26, 30, 31—WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 6—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 138, text fig. 1389c—LUTHER, N. Y. State Mus., Bull. 137 (1910) p. 26, 29—KINDLE, Jour. Geol., vol. 19 (1911) p. 348—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 16, 21—CLARKE, U. S. Geol. Survey, Geol. Atlas of U. S., folio 179 (1912) p. 11; Md. Geol. Survey, Middle and Upper Devonian (1913) p. 363, 370, 371, 372, 412, 444—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 695, pl. 72, figs. 4, 5—LUTHER, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 41; N. Y. State Mus., Bull. 172 (1914) p. 25—BURTS, Am. Jour. Sci., 4th ser., vol. 46 (1918) p. 531, 532—REGER, W. Va. Geol. Survey, County

Repts., Mineral and Grant counties (1924) p. 742, 747—MORGAN, [Oklahoma] Bur. Geol., Bull. 2 (1924) p. 46, pl. 53, fig. 5—TILTON, Am. Jour. Sci., 5th ser., vol. 17 (1929) p. 350—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312, 317—WILLARD, Geol. Soc. Am., Bull., vol. 46 (1935) p. 1208—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 15 (1936); Geol. Soc. Am., Bull., vol. 48 (1937) p. 1254; Geol. Soc. Am., Spec. Pap. 14 (1938) p. 63-70, text fig. 10, pl. 12, figs. 1-10.

Goniatites (Probeloceras) lutheri GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 298, text fig. 233.

Timanites (Probeloceras) Lutheri FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25-26.

Tully?, Genesee, and/or Naples: New York, Pennsylvania, Maryland, Virginia, and West Virginia; and possibly the Hamilton of New York and the Woodford of Oklahoma.

Probeloceras lynx (Clarke) = **Pobeloceras iynx**

Probeloceras? naplesense Clarke = **Neomanticoceras naplesense**

Prolecanites chemungensis (Vanuxem) = **Schindewolfoceras chemungense**

Prolecanites syngonus (Clarke) = **Sandbergeroceras? syngonum**

Prolobites simplex Raymond = **Raymondiceras simplex**

PROTOKIONOCERAS Grabau and Shimer (Kionoceratidae)

GENOTYPE: *Orthoceras medullare* Hall

Protokionoceras GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 58—FOERSTE, Can. Geol. Survey, Mem. 154 (1928) p. 263; Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 286, 308-312.

Protokionoceras fenestrulatum (Clarke)

Orthoceras fenestrulatum CLARKE, N. Y. State Geol., Ann. Rept. 13, vol. 1 (1894) p. 168-169, pl. 2, figs. 10, 11—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Orthoceras (Kionoceras) fenestrulatum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 625.

Stafford limestone member of Hamilton: western New York.

Protokionoceras inoptatum (Hall)

Orthoceras molestum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 37, fig. 1 [not pl. 35, figs. 6, 8].

Orthoceras inoptatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 267-268, pl. 37, fig. 1, pl. 112, figs. 9, 10—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42.

Orthoceras (Kionoceras) inoptatum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 627.

Onondaga: western New York.

Protokionoceras marcellense (Hall) = **Striacoceras typum**

Protokionoceras norumbegae (Clarke)

Orthoceras norumbegae CLARKE, N. Y. State Mus., Bull. 107 (1907) p. 177-178, text figs.; N. Y. State Mus., Mem. 9, pt. 2 (1909) p. 97, 127, pl. 22, figs. 14, 15—WILLIAMS and BREGER, U. S. Geol. Survey, Prof. Pap. 89 (1916) p. 10, 282.

Chapman: Edmunds Hill, Aroostook Co., Maine.

Protokionoceras perstriatum (Hall)

Orthoceras perstriatum HALL, Pal. N. Y., vol. 3 (1859) p. 346, pl. 72, fig. 3—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 323—REESIDE, U. S. Geol. Survey, Prof. Paper 108 (1917) p. 203.

New Scotland: Schoharie, N. Y.; and possibly the Keyser of Pennsylvania.

Protokionoceras trusitum (Clarke and Ruedemann)

Orthoceras trusitum CLARKE and RUEDEMANN, N. Y. State Mus., Mem. 5 (1903) p. 77-78, pl. 10, figs. 25, 26, pl. 13, figs. 1-10 [also issued as N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8, 1905]—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 1, Pub. 2 (1910) p. 52, 196, 212.

Protokionoceras trusitum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 59—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 1048-1049.

Silurian: New York; and possibly the Detroit River of Michigan.

PROTORNOCERAS Dybczyński = **TORNOCERAS** (**PROTORNOCERAS**)**PSEUDORTHOCERAS** Girty (**Pseudorthoceratidae**)

GENOTYPE: *Orthoceras knoxense* McChesney

Pseudorthoceras GIRTY, N. Y. Acad. Sci., Ann., vol. 21 (1911) p. 143; U. S. Geol. Survey, Bull. 544 (1915) p. 227—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 521—MILLER, DUNBAR, and CONDRA, Nebr. Geol. Survey, 2d ser., Bull. 9 (1933) p. 77-81—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 30-31.

Pseudorthoceras palmerae Flower and Caster

Pseudorthoceras palmerae FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 31-32, pl. 7, figs. 1-3.

Panama member of Venango: Erie Co., Pa.

RAYMONDICERAS Schindewolf (**Cheiloceratidae**)

GENOTYPE: *Prolobites simplex* Raymond

Raymondiceras SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 336-340—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 171-172.

Raymondiceras simplex (Raymond)

Prolobites sp. RAYMOND, Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 118, 120; Int. Zool. Cong., Seventh, Pr., *advance print* (1910) p. 2; Int. Zool. Cong., Seventh, Pr. (1912) p. 742.

Prolobites simplex RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 152-153, text fig. 3, pl. 7, figs. 13, 14, pl. 8, figs. 1-3—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 27.

Tornoceras crebrisepium [part] RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 153-154, pl. 8, fig. 8 [not text fig. 4 or pl. 8, figs. 5-7].

Raymondiceras simplex SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 336-340, text figs. 2, 5a, 5b—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 46 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 173-174, text figs. 36B, 36C, pl. 38, figs. 1-6.

Three Forks: Three Forks, Montana.

RHADINOCERAS Hyatt (**Rhadinoceratidae**)

GENOTYPE: *Nautilus cornulum* Hall

Rhadinoceras HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 530; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 523; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 604—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192-193.

Rhadinoceras clarkei (Cleland)

Gyroceras eryx CLELAND, Jour. Geol., vol. 15 (1907) p. 469; Wis. Geol. and Nat. Hist. Survey, sci. ser. 6, Bull. 21 (1911) p. 19, 140-141, pl. 33. [Not *Gyroceras eryx* HALL, 1861.]

Gyroceras clarkei CLELAND, Jour. Geol., vol. 15 (1907) p. 468, text fig. 14.

Milwaukee: Berthelet, Wis.

Rhadinoceras cornulum (Hall)

Nautilus cornulum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 60, figs. 5, 6; Pal. N. Y., vol. 5, pt. 2 (1879) p. 414-415, pl. 60, figs. 5, 6.

Nephriticeras (Nautilus) cornulum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 300.

Rhadinoceras cornulum HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 530-531—FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 192-193—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 52.

Hamilton: Cazenovia, N. Y.

Rhadinoceras eryx (Hall)

Gyroceras eryx HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 39; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 67; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 48, fig. 1; Pal. N. Y., vol. 5, pt. 2 (1879) p. 386-387, pl. 58, fig. 1, pl. 103, fig. 3. [Not *Gyroceras eryx* CLELAND, 1907.]

Milwaukee: Milwaukee, Wis.

Rhadinoceras hyatti (Hall) = *Nephriticerina hyatti***Rhadinoceras validum** (Hall)

Gyroceras validum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 51, fig. 2; Pal. N. Y., vol. 5, pt. 2 (1879) p. 385-386, pl. 49, fig. 2, pl. 100, fig. 1—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 69.

Schoharie: Schoharie and Albany counties, N. Y.

RHYTICERAS Hyatt [Ruedemann and Goldring] = *POLYCRONITES*

Rhyticeras ornata Savage = *Tetranodoceras ornatum*

RHYTICERAS Hyatt (Ryticeratidae)

GENOTYPE: *Cyrtoceras jason* Hall

Rutoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 285—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 374—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 518.

Ryticeras HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 522—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 79—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 603.

Ryticeras aemulum (Hall)

Cyrtoceras aemulum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 371-372, pl. 97, figs. 1-9, pl. 98, figs. 3, 4—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

Cyrtoceras (Zitteloceras) aemulum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 580-581.

Ryticeras aemulum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 80.

Schoharie: Schoharie and Albany counties, N. Y.; and the Pendleton at Pendleton, Ind.

Ryticeras ammon (Billings)

Cyrtoceras ammon BILLINGS, Can. Jour. Industry, Sci., and Arts, new ser., vol. 6 (1861) p. 361—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 248.

Onondaga: Ontario.

Rhyticeras barrisi Savage = **Centroceras pratti****Ryticeras citum** (Hall)

Cyrtoceras citum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 372, pl. 51, figs. 1-3; N. Y. Assembly Doc. 105 (1886) pl. (124) 9, figs. 1-3—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 36, pl. 124, figs. 1-3—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 328—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 10—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 276.

Cyrtoceras (Zitteloceras) citum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 581-582.

Ryticeras citum GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 80—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 125, 128, 145, 248.

Onondaga: New York and Ontario; and possibly the Marcellus of New York.

Ryticeras? columbiense (Whitfield)

Gyroceras columbiense WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 210, 243; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 532-533, pl. 10, fig. 8; Ohio Geol. Survey, vol. 7 (1893) p. 430-431, pl. 6, fig. 8—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 33, 36, 49, 61, 69, 83, 168.

Ryticeras columbiense GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 84, text fig. 1302—STAUFFER, U. S. Geol. Survey, Geol. Atlas of U. S., folio 197 (1915) p. 5, illustration 2, fig. 44.

Columbus: central Ohio.

Ryticeras cyclops (Hall)

Gyroceras cyclops HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 40; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 68; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 53, figs. 1-3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 387-389, pl. 101, fig. 1, pl. 102, fig. 1, pl. 103, figs. 1, 2, pl. 104, figs. 1, 2—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 243—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 60-63—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 33, 49, 65, 83, 92, 94, 96, 138, 168; Ohio Geol. Survey, 4th ser., Bull. 14 (1912) p. 22—WILLIAMS, Int. Geol. Cong., Twelfth, Guide Book 4 (1913) p. 112—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Gyroceras (Rhyticeras) cyclops CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 596.

Ryticeras cyclops GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 79, 84, text fig. 1300.

Onondaga: New York, Ohio, and Kelley's Island in Lake Erie.

Ryticeras? dictyum (White)

Cyrtoceras dictyum WHITE, Philadelphia Acad. Nat. Sci., Pr. (1876) p. 33-34.

Cedar Valley?: Troy Mills, Linn Co., Iowa.

Ryticeras eugenium (Hall)

Cyrtoceras eugenium HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 42; N. Y. State Cab., Nat. Hist., Ann. Rept. 15 (1862) p. 70, pl. 9, figs. 1-3; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 36, fig. 5, pl. 46, figs. 5-7; Pal. N. Y., vol. 5, pt. 2 (1879) p. 369-370, pl. 36, fig. 5, pl. 47, figs. 5-7, pl. 96, figs. 1-11, pl. 97, figs. 10, 11—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 188, 295, 327, 328, text fig. 113.

Orthoceras foliatum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 46; N. Y. State Cab. Nat.

Hist., Ann. Rept. 15 (1862) p. 74, pl. 7, figs. 6, 7—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 550, text figs.

Cyrtoceras (Zitteloceras) eugenium CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 582-583.

Ryticeras eugenium GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 80, text fig. 1296.

Cyrtoceras (Ryticeras) eugenium GOLDRING, N. Y. State Mus., Handb. 14 (1933) p. 88, text fig. 24H.

Schoharie and Onondaga: New York.

Ryticeras jason (Hall)

Cyrtoceras jason HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 43; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 71; Pal. N. Y., vol. 5, pt. 2 (1879) p. 381-382, pl. 50, figs. 1, 2; N. Y. Assembly Doc. 105 (1886) pl. (124) 9, fig. 7—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 36, pl. 124, fig. 7—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327, 328.

Gyroceras Jason HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 52, fig. 2—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 737, pl. 27, fig. 1.

Rutoceras jason HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 285.

Cyrtoceras (Rhyticeras) jason CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 584.

Ryticeras jason GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 79, text fig. 1295.

Schoharie and Onondaga: New York; and possibly the Jeffersonville of Kentucky.

Ryticeras matheri (Conrad) = **Halloceras matheri**

Ryticeras ohioense (Meek)

Cyrtoceras ohioense MEEK, Philadelphia Acad. Nat. Sci., Pr. (1871) p. 86—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242.

Cyrtoceratites ohioensis MEEK, Ohio Geol. Survey, Rept., vol. 1, pt. 2, Pal. (1873) p. 229-230, pl. 23, figs. 2a, 2b—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 69, 168—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376.

Columbus: central Ohio.

Ryticeras spinosum (Conrad) = **Cophinoceras spinosum**

Ryticeras trivolve (Conrad)

Cyrtoceras trivolvis CONRAD, N. Y. Geol. Survey, Ann. Rept. 4 (1840) p. 206.

Gyroceras trivolvis HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 37—N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 65; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 54, figs. 1-5, pl. 56, fig. 4; Pal. N. Y., vol. 5, pt. 2 (1879) p. 374-376, pl. 52, figs. 1-6, pl. 52a, figs. 1-7—FOORD, Cat. foss. Cephalopoda in British Mus., pt. 2 (1891) p. 62-63—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 202, 328, text figs. 140, 141—BAKER [STAUFFER], Ontario Bur. Mines, Ann. Rept., vol. 20, pt. 1 (1911) p. 227—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 11—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 145.

Orthocera paradoxa EATON, *Geological Text Book . . .*, ed. 2 (1832) p. 29. [Not *Orthocera paradoxa* SOWERBY, 1824.]

Gyroceras (Zitteloceras) trivolve CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 599-600.

Ryticeras trivolve GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 81, text figs. 1297, 1298.

Ryticeras (Gyroceras) trivolve GOLDRING, N. Y. State Mus., Handb. 14 (1933) text fig. 26L.

Onondaga: New York and Ontario.

Ryticeras (Gyroceras) trivolve (Conrad) = Ryticeras trivolve

RUTOCERAS Hyatt = *RYTICERAS*

Rutoceras jason (Hall) = Ryticeras jason

SANDBERGEROCERAS ["*SANDBERGEOCERAS*"] Hyatt (Prolecanitidae)

GENOTYPE: *Sandbergeroceras sandbergerorum* Miller

Sandbergeroceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 333—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 421—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 242–243—HAUG, Soc. géol. France, Mém., Pal., tome 7, no. 18 (1898) p. 24—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 554—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 62—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 19, 20, 21, 24—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 27—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 119, 129—BROILL, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 550—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 178–179.

Triainoceras ["*Triainoceras*"] HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 336–337—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 421—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 242—HAUG, Soc. géol. France, Mém., Pal., tome 7, no. 18 (1898) p. 24—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 554—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients., Bd. 14 (1902) p. 62—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 20, 21, 24—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 27—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 633—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 119, 129—BROILL, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 550—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 178–179.

Sandbergeroceras chemungense (Vanuxem) = Schindewolfoceras chemungense and S.? equicostatum

Sandbergeroceras chemungense equicostatum (Hall) = Schindewolfoceras equicostatum

Sandbergeroceras? syngonum Clarke

Goniatites chemungensis n. var. CLARKE, U. S. Geol. Survey Bull. 16 (1885) p. 51.

Sandbergeroceras syngonum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 53 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 53 [*nomen nudum*]; N. Y. State Geol., Ann. Rept. 16 (1899) p. 106–108, text figs. 79–81, pl. 6, fig. 23, pl. 7, figs. 19, 20 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 650—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 60—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361, 366, 370; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361, 366, 370—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 18—TILTON, Am. Jour. Sci., 5th ser., vol. 17 (1929) p. 350—RUEDEMANN, Geol. Soc. Am., Mem. 2 (1934) p. 57—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 47 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 179–180, text fig. 37, pl. 36, figs. 9–11.

Prolecanites syngonus FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 27.

Cashaqua and Middlesex shale members of Naples: New York; and possibly the Upper Devonian of Tygart Valley, W. Va.

SCHINDEWOLFOCERAS Miller (Prolecanitidae)

GENOTYPE: *Goniatites chemungensis* Vanuxem

Schindewolfoceras MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 181–182.

Schindewolfoceras chemungense (Vanuxem)

Goniatites chemungensis VANUXEM, Geol. N. Y., pt. 3, Comprising the survey of the third geological district (1842) p. 182, text fig. 49 (1)—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) p. 69, fig. 9, pl. 74, fig. 6;

Pal. N. Y., vol. 5, pt. 2 (1879) p. 467-469, pl. 69, fig. 9, pl. 74, fig. 6—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 255, text fig.

Sandbergeroceras chemungense HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 333—KARPINSKY, Acad. Imp. Sci. St. Pétersbourg, Bull., 5th ser., vol. 4 (1896) p. 191—CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 107-108, text fig. 82 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 649—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 381; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 381—WILLIAMS, U. S. Geol. Survey, Geol. Atlas of U. S., folio 169 (1909) p. 6—SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 432, 444, 511, 526—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 697-699, pl. 72, fig. 7—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 320.

Prolecanites chemungensis CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 381; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 381—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 27.

Schindewolfoceras chemungense MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 182-184, text fig. 38B, pl. 36, figs. 7, 8.

Cayuta shale member of Chemung: near Owego, N. Y.; and possibly the Jennings of Maryland.

Schindewolfoceras? equicostatum (Hall)

Goniatites Chemungensis equicostatus HALL, Descriptions of new species of Goniatitidae, with a list of previously described species (1874) p. 3-4; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 135, 136; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 69, fig. 10; Pal. N. Y., vol. 5, pt. 2 (1879) p. 469, pl. 69, fig. 10.

Sandbergeroceras Chemungense [part] CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 108 [also issued as N. Y. State Mus., Ann. Rept. 50].

Sandbergeroceras chemungense equicostatum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 649-650—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 320.

Schindewolfoceras? equicostatum MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 184-185, pl. 36, fig. 12.

Chemung: western New York or Pennsylvania.

SPHYRADO CERAS Hyatt (Hercoceratidae)

GENOTYPE: *Trochoceras clio* Hall

Sphyradoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 298; Am. Phil. Soc., Pr., vol. 32 (1894) p. 529; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 520, text fig. 1065; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 601, text fig. 1114—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 74—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 371-372, pl. 41, figs. 3A-3D.

Trochoceras [part] ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 384.

Sphyradoceras clio (Hall)

Trochoceras clio HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 14 (1861) p. 108; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 59, figs. 3-7 [part]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 392-393, pl. 59, figs. 1-5, 9, pl. 61, fig. 6—LESLEY, Pa. Geol. Survey, Rept. P4 (1890) p. 1127, text fig.—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 189, 327, text fig. 115; Science, n. ser., vol. 23 (1906) p. 467; N. Y. Acad. Sci., Ann., vol. 18, pt. 2 (1908) p. 267. [Not *Trochoceras clio* HALL, 1862.]

Trochoceras discoideum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda, pl. 59, figs. 1, 2.

Sphyradoceras clio HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 298—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 654-655—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 74, text fig. 1288—Foerste, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 371-372,

pl. 41, figs. 3A-3D; Ontario Dept. Mines, Ann. Rept. 37, pt. 6, appd. (1929) p. 74-75, pl. 1, figs. 2A, 2B.

Schoharie: Schoharie and Albany counties, N. Y.; and possibly equivalent beds in Michigan and the Abitibi River of Ontario.

Sphyradoceras discoideum (Hall)

Trochoceras discoideum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 36; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 64; Pal. N. Y., vol. 5, pt. 2 (1879) p. 394-395, pl. 59, figs. 6-8—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—GOLDRING, N. Y. State Mus., Handb. 14 (1933) text fig. 241. [Not *Trochoceras discoideum* HALL, 1876].

Trochoceras clio HALL, N. Y. State Cab., Nat. Hist., Ann. Rept. 15 (1862) pl. 9, fig. 8; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 59, figs. 3-7 [part].

Trochoceras (Sphyradoceras) discoideum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 655.

Schoharie: Schoharie and Albany counties, N. Y.

SPORADOCERAS Hyatt (Cheiloceratidae)

GENOTYPE: *Goniatites bidens* Sandberger and Sandberger

Sporadoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 321-322—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 419—GÜRICH, Russ.-kais. Min. Ges. St. Petersburg, Verh., 2d ser., Bd. 32 (1896) p. 347-348—FOORD and CRICK, Cat. foss. Cephalopoda in British Museum, pt. 3 (1897) p. 127-128—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 551—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 79-80—WEDEKIND, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 26 (1908) p. 593—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 126—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 31—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 147-148—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 339-340—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 552—MATERN, Preuss. geol. Landes., Abh., N. F., Heft 134 (1931) p. 40-41—MILLER and FLOWER, Jour. Geol., vol. 44 (1936) p. 751-754—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 174-175.

Sporadoceras milleri (Flower and Caster)

Paralegoceras? milleri FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 56-57, pl. 8, figs. 1, 2.

Sporadoceras milleri MILLER and FLOWER, Jour. Geol., vol. 44 (1936) p. 754-757, text figs. 1-3—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 175-176, pl. 37, figs. 5-7.

Lower Conewango: Erie Co., Pa.

SPYRO CERAS Hyatt (Kionoceratidae)

GENOTYPE: *Orthoceras crotalum* Hall

Spyroceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 276—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 369—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 519—CLARKE and RUEDEMANN, N. Y. State Mus., Mem. 5 (1903) p. 82—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 63—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 600—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 1180—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 521—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 20 (1924) p. 225—CRONEIS, Am. Jour. Sci., 5th ser., vol. 12 (1926) p. 191, 192—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 22 (1927) p. 38; Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 281-285—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 25-26; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 50, 51.

Spyroceras aegea (Hall)

Orthoceras aegea HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 52; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 80; Pal. N. Y., vol. 5, pt. 2 (1879) p. 295-296, pl. 82, figs. 7-13—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 14—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11, no. 1 (1914) p. 23, 91.

Orthoceras (*Spyroceras*) *aegea* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 617.

Spyroceras aegaea COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Marcellus, Hamilton, and Tully: New York.

Spyroceras arenosum (Hall)

Orthoceras arenosum HALL, Pal. N. Y., vol. 3 (1859) p. 480—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 325.

Oriskany: Schoharie, N. Y.

Spyroceras bipartitum (Hall)

Orthoceras bipartitum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 313-314, pl. 113, figs. 20, 21—CASTER, Bull. Am. Pal., vol. 21, no. 71 (1934) p. 74—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 15.

Spyroceras bipartitum FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 19—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 330.

Conewango: Warren, Pa.

Spyroceras caelamen (Hall)

Orthoceras crotalum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 42, fig. 10 [not 1-9, 11, 12].

Orthoceras nuntium [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 43, fig. 15 [not 4-14].

Orthoceras caelamen HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 298-299, pl. 42, fig. 10, pl. 43, fig. 15, pl. 82, fig. 16, pl. 113, figs. 22, 23—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 544, text figs.—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 51—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 21; N. Y. State Mus., Bull. 152 (1911) p. 14.

Orthoceras (*Spyroceras*) *caelamen* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 620.

Spyroceras caelamen FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 15—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 26.

Hamilton: New York and Pennsylvania.

Spyroceras caldwellensis (Miller and Gurley)

Orthoceras caldwellensis MILLER and GURLEY, Ill. State Mus. Nat. Hist., Bull. 11 (1896) p. 31-32, pl. 4, figs. 1, 2—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 742-743.

Middle? Devonian: Clarke Co., Indiana.

Spyroceras clarkei Prosser

Spyroceras clarkei PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 86, 108, 317-318, pl. 41, figs. 9-11.

Romney: Ernstville, Md.

Spyroceras? constrictum (Conrad)

Orthoceras constrictum CONRAD, N. Y. Geol. Survey, Ann. Rept. 2 (1838) p. 111, 117—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 218, 289—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 545, text fig.—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 20-21. [Not *Orthoceras constrictum* VANUXEM, 1842.]

Hamilton: Madison, N. Y.; and possibly the Hamilton of Pennsylvania and the Marcellus of New York.

Spyroceras crotalum (Hall)

Orthoceras crotalum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 50; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 78, pl. 8, figs. 1, 2; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 42, figs. 1-9, 11, 12 [not 10]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 296-298, pl. 42, figs. 1-9, 11, 12, pl. 82, figs. 1-6, pl. 113, fig. 13—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 546-547, text figs.—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 48, 54—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 262, 331—SLOCOM, Field Columbian Mus., Pub. 113, geol. ser., vol. 2, no. 8 (1906) p. 265—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 19—BUTTS, Ala. Geol. Survey, Spec. Rept. 14 (1926) p. 151, 153.

Spyroceras (Orthoceras) crotalum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 276—BUTTS, Am. Jour. Sci., 5th ser., vol. 14 (1927) p. 375.

Spyroceras crotalum KEYES, Johns Hopkins Univ. Circ., vol. 11 (1891) p. 29—HYATT, Am. Phil. Soc., Pr., vol. 32 (1894) p. 361, 582, text figs. 10-12—PROSSER, KINDLE, and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 67, 77, 86, 108—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 314, 315, pl. 41, figs. 1-5—PROSSER, Jour. Geol., vol. 23 (1915) p. 15—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 145, 236—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 800, 806, 859—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 19.

(?) *Orthoceras* sp. *c* Girty, U. S. Geol. Survey, Ann. Rept. 20, pt. 2 (1900) p. 63.

Orthoceras (Spyroceras) crotalum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 622-623—KINDLE, U. S. Geol. Survey, Bull. 391 (1909) p. 36, pl. 10, fig. 12.

Hamilton: New York and Pennsylvania; and possibly the Tully of New York, the Romney of West Virginia and Maryland, the Middle Devonian of Ontario, the Frog Mountain and Ragland of Alabama, and the Ouray of Colorado.

Spyroceras (Orthoceras) crotalum (Hall) = **Spyroceras crotalum****Spyroceras? falsum** Fenton and Fenton = **Dawsonoceras falsum****Spyroceras geneva** (Clarke)

Orthoceras geneva CLARKE, N. Y. State Geol., Ann. Rept. 13, vol. 1 (1894) p. 168, pl. 2, figs. 5-7—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42.

Orthoceras (Spyroceras) geneva CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 626.

Spyroceras geneva FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 26-27, pl. 1, fig. 9.

Onondaga, and Cherry Valley member of Marcellus: New York.

Spyroceras idmon (Hall)

Orthoceras perelegans HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 52; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 80; Pal. N. Y., vol. 5, pt. 2 (1879) p. 222, 303. [Not *Orthoceras perelegans* Salter, 1848.]

Orthoceras nuntium [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 43, figs. 11, 12 [not 4-10, 13, 15].

Orthoceras idmon HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 302-303, pl. 43, figs. 11, 12.

Spyroceras idmon COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Hamilton: Livingston and Madison counties, N. Y.; and possibly the Tully of New York.

Spyroceras incarcerationum (Clarke)

Orthoceras incarcerationum CLARKE, N. Y. State Geol., Ann. Rept. 13, vol. 1 (1894) p. 170-171, pl. 2, figs. 3, 4; N. Y. State Mus., Bull. 49 (1901) p. 135—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 10.

Orthoceras (Spyroceras) incarcerationum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 627.

Marcellus: western New York.

Spyroceras iowaense (Miller)

Orthoceras undulatum OWEN, U. S. 28th Congress, 1st sess., Senate Ex. Doc. 407, serial set no. 437 (1844) p. 69, pl. 12, fig. 6. [Not *Orthoceras undulatum* SOWERBY, 1812.]

————— OWEN, U. S. 26th Congress, 1st sess., House Ex. Doc. 239, serial set no. 467 (1845) [not serial set no. 368, 1840] pl. 12 [opposite p. 80], fig. 6. [Illustration only, that is, no name accompanies the figure.]

Orthoceras iowaense MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 449.

Cedar Valley?: east-central Iowa or adjacent part of Illinois.

Spyroceras lima (Hall)

Orthoceras lima HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 303-304, pl. 113, figs. 24, 25—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 135—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 10—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 51.

Orthoceras (Spyroceras) lima CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 627.

Hamilton and Marcellus: New York.

Spyroceras multicinctum (Hall)

Orthoceras multicinctum HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 48; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 76, pl. 7, figs. 2, 3; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 43, figs. 1-3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 263-264, pl. 39, figs. 1-3—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 553, text figs.—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327. [Not *Orthoceras multicinctum* WINCHELL, 1883.]

Orthoceras (Cycloceras) multicinctum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 632.

Schoharie: Schoharie and Albany counties, N. Y.

Spyroceras nuntium (Hall)

Orthoceras nuntium HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 51; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 79, pl. 8, figs. 3, 4; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 43, figs. 4-10, 13, 14 [not 11, 12, 15]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 299-301, pl. 43, figs. 4-10, 13, 14, pl. 82, figs. 14, 15—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 242—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 543-544, text figs.—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 526-527, pl. 7, figs. 1, 2; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 425-426, pl. 3, figs. 1, 2—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 290, text fig. 225—LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 915, 919, pl. 5, fig. 9—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 48, 51, 54, 57—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10

(1909) p. 36, 69, 153, 169, 182—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 19; N. Y. State Mus., Bull. 152 (1911) p. 10, 12—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 17—STAUFFER, Canada Geol. Survey, Mem. 34 (1915) p. 54.

Orthoceras (Spyroceras) nuntium CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 633—BERGER, Centr. f. Min., Geol. und Pal., Jahrg. 1934, Abt. B (1934) p. 289-299, text fig. 1.

Spyroceras nuntium GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 64, text fig. 1272—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 67, 108, 316-317, pl. 41, figs. 6-8—STAUFFER, Canada Geol. Survey, Mem. 34 (1915) p. 140, 142, 145, 148, 236, 248—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 312—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 800, 806, 808, 859—WILLARD, Geol. Soc. Am., Bull., vol. 48 (1937) p. 1248—MILLER, Geol. Soc. Am., Bull., vol. 48 (1937) p. 1254—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 27-28, pl. 1, fig. 4.

Hamilton and Tully: New York and Pennsylvania; and possibly the Marcellus of New York, the Romney of West Virginia and Maryland, and the Middle Devonian of Ohio, Ontario, and Germany.

Spyroceras nuntoides (Clarke)

Orthoceras nuntoides CLARKE, N. Y. State Geol., Ann. Rept. 13, vol. 1 (1894) p. 170, pl. 2, figs. 8, 9—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 46.

Orthoceras (Spyroceras) nuntoides CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 632.

Marcellus: western New York.

Spyroceras ontario (Clarke)

Orthoceras ontario CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 51-52, pl. 3, fig. 1—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 544—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 25—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Cashaqua shale member of Naples: western New York.

Spyroceras pertextum (Hall)

Orthoceras pertextum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 314, pl. 90, figs. 16, 17—MILLWARD, Carnegie Mus., Ann., vol. 5 (1909) p. 484—FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1938) p. 16.

Orthoceras (Spyroceras) pertextum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 636.

Spyroceras pertextum CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Naples: Ithaca, N. Y.; and possibly the Riceville at Meadville, Pa.

Spyroceras pulcher (Parks)

Orthoceras pulcher PARKS, Ontario Bur. Mines, Rept. for 1904, vol. 13, pt. 1 (1904) p. 189-190, pl. 6, fig. 2.

Devonian: Kwataboahegan River, Ontario.

Spyroceras rhysum (Clarke)

Kionoceras rhysum CLARKE, N. Y. State Mus., Bull. 107 (1907) p. 176, text figs.; N. Y. State Mus., Mem. 9, pt. 1 (1908) p. 33, 34, 35, 38, 43, 104, 114-115, 142, pl. 13, figs. 1-5; N. Y. State Mus., Mem. 9, pt. 2 (1909) p. 13, 21.

Grand Grève: Grand Grève and Gaspé Forillon, Quebec; and possibly the St. Alban and Cape Bon Ami of Quebec, and the Dalhousie of Dalhousie, New Brunswick.

Spyroceras rudens (Hall)

Orthoceras rudens HALL, N. Y. Assembly Doc. 105 (1886) pl. (118) 2, fig. 1—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 28, pl. 118, fig. 1—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 51, 52.

Orthoceras (*Cycloceras*) *rudens* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 638.

Hamilton?: Livingston Co., N. Y.

Spyroceras schucherti (Maynard)

Orthoceras schucherti MAYNARD, Md. Geol. Survey, Lower Devonian (1930) p. 130, 487-488, pl. 88, fig. 4.

Orthoceras multiannulatum [*nomen nudum*] SWARTZ and MAYNARD, Md. Geol. Survey, Lower Devonian (1913) p. 157.

Keyser: Cumberland, Md.

Spyroceras sicinus (Hall)

Orthoceras subulatum [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 38, figs. 1, 2 [not 3].

Orthoceras sicinus HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 301, pl. 38, figs. 1, 2—BRANSON [Bassler], Univ. Mo., Bull., sci. ser., vol. 2, no. 2 (1911) p. 27.

Orthoceras vicinus GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329. [Obviously a misprint and was intended to read *Orthoceras sicinus*.]

Marcellus: Schoharie, N. Y.; and possibly the Ohio at Oberlin, Ohio.

Spyroceras staffordense (Clarke)

Orthoceras staffordense CLARKE, N. Y. State Geol., Ann. Rept. 13, vol. 1 (1894) p. 169, pl. 2, figs. 1, 2; N. Y. State Mus., Bull. 49 (1901) p. 131—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45.

Orthoceras (*Kionoceras*) *staffordense* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 640.

Stafford limestone member of Hamilton: western New York.

Spyroceras tenuiannulatum (Hall)

Orthoceras tenuiannulatum HALL, Pal. N. Y., vol. 3 (1859) p. 345, pl. 72, fig. 1 [plates not published until 1861].

Spyroceras tenuiannulatum FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 285.

New Scotland: Albany Co., N. Y.

Spyroceras thestor (Hall)

Orthoceras thestor HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 302, pl. 82, fig. 18—TALBOT, Am. Jour. Sci., 4th ser., vol. 16 (1903) p. 150—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Orthoceras (*Cycloceras*) *thestor* CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 643.

Marcellus: Schoharie, Batavia, and Le Roy, N. Y.

Spyroceras thoas (Hall)

Orthoceras thoas HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 47; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 75, pl. 7, fig. 4; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 41, figs. 1-9; Pal. N. Y., vol. 5, pt. 2 (1879)

p. 261-263, pl. 41, figs. 1-9, pl. 78B, fig. 5, pl. 79, fig. 13, pl. 80, figs. 7, 10, 11, pl. 112, figs. 7, 8—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 560, text fig.—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1900) p. 741-742—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 118, 327, text fig. 112—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 34, 36, 69, 72, 169—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 376—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 53—GOLDRING, N. Y. State Mus., Handb. 14 (1933) p. 88.

Orthoceras hyas HALL, Descriptions of new species of fossils from the Upper Helanderberg, Hamilton, and Chemung groups (1861) p. 48; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 75, pl. 7, fig. 5—LESLEY, Pa. Geol. Survey, Rept. P4 (1889) p. 551, text fig.

Orthoceras (Dawsonoceras) thoas CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 643-645.

Spyroceras thoas GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 64, text fig. 1271—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 14, pt. 1 (1912) p. 11, fig. 2; Can. Geol. Survey, Mem. 34 (1915) p. 128, 140, 142, 145, 148, 248; U. S. Geol. Survey, Geol. Atlas of U. S., folio 197 (1915) p. 5, illustration 2, fig. 43—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 19.

Orthoceras troas WILLIAMS, Ontario Bur. Mines, Ann. Rept., vol. 29, pt. 2 (1920) p. 25. [Obviously a misprint and was intended to read *Orthoceras thoas*.]

Dawsonoceras thoas FLOWER and CASTER, Bull. Am. Pal., vol. 22, no. 75 (1935) p. 11.

Schoharie and Onondaga: New York; and possibly the Jeffersonville of southern Indiana, the Columbus of central Ohio, the Onondaga and Alpena of Ontario, and the Hamilton of Pennsylvania.

Spyroceras walpolense (Whiteaves)

Orthoceras walpolense WHITEAVES, Ottawa Nat., vol. 12, no. 6 (1898) p. 125-126; Can. Geol. Survey, Pal. Foss., vol. 3, pt. 4 (1906) p. 324, pl. 33, fig. 3.

Onondaga: Walpole and Cayuga townships, Ontario.

STRIACOCERAS Flower (Kionoceratidae)

GENOTYPE: *Orthoceras typum* Saemann

Striacoceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 28-29.

Striacoceras kionoceroides Flower

Striacoceras kionoceroides FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 40-41, pl. 2, fig. 5, pl. 9, fig. 5.

Cherry Valley limestone member of Marcellus: Stockbridge, N. Y.

Striacoceras typum (Saemann)

Marcellus orthocera VANUXEM, Geol. N. Y., pt. 3, Survey of third geol. district (1842) p. 147. [Not a Linnaean name.]

Orthoceras typum SAEMANN, Palaeontographica, Bd. 3 (1854) p. 164-165, pl. 20, figs. 1a-1e—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 38, figs. 4-7, 9 [not 8, 10]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 225—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 20.

Orthoceras marcellense HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 106—MILLER, The American Palaeozoic fossils, A catalogue of the genera and species . . . , ed. 2 (1877) p. 175—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 278-281, pl. 38, figs. 4-7, 9, pl. 83, figs. 1-10, 12, pl. 113, fig. 18—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 45—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 209, 210, 252, 329, text fig. 154—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 11—SMITH, N. Y. State Mus., Bull. 171 (1914) p. 63—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 13—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91—FOERSTE, Rept. Second Norwegian Arctic Expedition in "Fram" 1898-1902, no. 39, Det Norske Videnskaps-Akademi i Oslo (1926) p. 5.

Orthoceras (Kionoceras) marcellense CLARKE and RUEDEMANN, N. Y. State Mus. Bull. 65 (1903) p. 630-631.

Protokionoceras marcellense GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 60-61, text fig. 1264—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 119, 121, 240—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 806, 859.

Striacoceras typum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 14-15, 29-35, pl. 2, figs. 2, 3, 6, 7, 9, pl. 3, figs. 1-7, pl. 4, figs. 3, 4, 7-9, pl. 5, figs. 1, 6, pl. 6, fig. 7, pl. 7, fig. 2, pl. 8, fig. 7, pl. 9, figs. 3, 4, 11, 12.

Cherry Valley limestone member of Marcellus: New York; and possibly the Hamilton and Tully of New York and the Middle Devonian of Ontario.

Striacoceras typum alpha Flower

Striacoceras typum alpha FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 34, 35-37, pl. 3, fig. 2, pl. 4, fig. 8, pl. 6, fig. 7.

Cherry Valley limestone member of Marcellus: New York.

Striacoceras typum beta Flower

Striacoceras typum beta FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 34, 37-38, pl. 3, figs. 3-5, 7, pl. 4, fig. 7.

Cherry Valley limestone member of Marcellus: Stockbridge, Manlius, and Schoharie, N. Y.

Striacoceras typum delta Flower

Striacoceras typum delta FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 34-35, 39, pl. 3, fig. 6.

Cherry Valley limestone member of Marcellus: Stockbridge, N. Y.

Striacoceras typum epsilon Flower

Striacoceras typum epsilon FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 35, 39-40, pl. 5, fig. 6, pl. 9, figs. 3, 11.

Cherry Valley limestone member of Marcellus: Manlius and Stockbridge, N. Y.

Striacoceras typum gamma Flower

Striacoceras typum gamma FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 34, 38-39, pl. 3, fig. 1, pl. 4, fig. 9.

Cherry Valley limestone member of Marcellus: New York.

Tachoceras anderdonense Grabau = **Mitroceras? anderdonense**

TETRAGONOCERAS Whiteaves (Centroceratidae)

GENOTYPE: *Tetragonoceras gracile* Whiteaves

Tetragonoceras WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 105—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 525; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 606—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1924) p. 527.

Tetragonoceras gracile Whiteaves

Tetragonoceras gracile WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 105, pl. 8, figs. 2a, 2b; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 345.

Winnipegosis: Dawson Bay, Lake Winnipegosis, Manitoba.

TETRANODOCERAS Flower (Ryticeratidae)

GENOTYPE: *Cyrtoceras transverssum* Hall

Tetranodoceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 41-42.

Tetranodoceras constrictum (Meek and Worthen)

Gyroceras? *constrictum* MEEK and WORTHEN, Ill. Geol. Survey, vol. 3 (1868) p. 446-447, pl. 12, figs. 1a, 1b.

Tetranodoceras constrictum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 42.

Hamilton: Jackson Co., Ill.

Tetranodoceras ornatum (Savage)

Rhyticeras ornata SAVAGE, Ill. Acad. Sci., Tr., vol. 14 (1922) p. 205-206, pl. 4, fig. 1.

Wapsipinicon: Sears, Ill.

Tetranodoceras submamillatum (Whiteaves)

Nautilus or *Gyroceras* sp. BILLINGS, in HIND, Report on the Assiniboine and Saskatchewan Exploring Expedition (1859) p. 187.

Gyroceras submamillatum WHITEAVES, Royal Soc. Can., Tr., vol. 8, sec. 4 (1891) p. 107-108, pl. 10, figs. 1, 1a; Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 4 (1892) p. 346—TYRRELL, Can. Geol. Survey, Ann. Rept. 5, sec. E (1892) p. 163—KINDLE, Ottawa Nat., vol. 26, no. 2 (1912) p. 110; Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 225.

Winnipegosis: Manitoba.

Tetranodoceras transversum (Hall)

Cyrtoceras transversum HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 104.

Gyroceras transversum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 57, figs. 1-4; Pal. N. Y., vol. 5, pt. 2 (1879) p. 384-385, pl. 56, figs. 1-4—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 599.

Gomphoceras transversum CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 125.

Tetranodoceras transversum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 42-46, pl. 2, fig. 8, pl. 6, figs. 1-5, pl. 7, fig. 1.

Cherry Valley limestone member of Marcellus: New York.

Thoracoceras wilsoni Clarke = **Casteroceras alternatum****TIMANITES** Mojsisovics (Manticoceratidae)

GENOTYPE: *Timanites keyserlingi* Miller

Timanites MOJSISOVICS, Kaiser.-k. geol. Reichst., Abh., Bd. 10 (1882) p. 183, 184—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 416, 418—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 59, 61—HAUG, Soc. géol. France, Mém., Pal., tome 7, no. 18 (1898) p. 45, 46—HOLZAPFEL, Mém. Com. Géol. [Russie], vol. 12, no. 3 (1899) p. 41-43—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 550—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 59—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 127—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 25—WEDEKIND, Ges. naturf. Freunde Berlin, Sitz., Jahrg. 1913 (1913) p. 47; Palaeontographica, Bd. 62 (1918) p. 127—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, ed. 6 (1934) p. 550—SMITH, U. S. Geol. Survey, Prof. Pap. 167 (1932) p. 22, 24, 25, 26, 27, 34—SCHINDEWOLF, Deutsch. geol. Ges., Zeitschr., Bd. 88 (1937) p. 691—MILLER and WARREN, Jour. Pal., vol. 10 (1936) p. 632-634—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 130-131.

Timanites (Probeloceras) naplesense (Clarke) = **Neomanticoceras naplesense****Timanites occidentalis** Miller and Warren

Timanites occidentalis MILLER and WARREN, Jour. Pal., vol. 10 (1936) p. 634-636, text figs. 4-6—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 131-132, text fig. 27A, pl. 29, figs. 4, 5.

Minnewanka: Jasper Park, Alberta.

Timanites (Probeloceras) Lutheri (Clarke) = **Probeloceras lutheri**
Timanites (Probeloceras) lynx (Clarke) = **Eobeloceras iynx**

TORNOCERAS Hyatt (Tornoceratidae)

GENOTYPE: *Goniatites uniangularis* Conrad

Tornoceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 320-321—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 418, text fig. 571—FRECH, Deutsch. geol. Ges., Zeitschr., Bd. 39 (1887) p. 442—BEECHER, Am. Jour. Sci., 3d ser., vol. 40 (1890) p. 72—LESLEY, Pa. Geol. Survey, Rept. P4 (1890) p. 1189—FRECH, Deutsch. geol. Ges., Zeitschr., Bd. 45 (1893) p. 333—GÜRICH, Russ.-kais. Min. Ges. St. Petersburg, Verh., 2d ser., Bd. 32 (1896) p. 335—HOLZAPFEL, K. preuss. geol. Landes., Abh., N. F., Heft 16 (1895) p. 80-85—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 91-92—HOLZAPFEL, Mém. Com. Géol., vol. 12, no. 3 (1899) p. 14—CLARKE, N. Y. State Mus., Ann. Rept. 50, vol. 2 (1899) p. 109-111, 121-122, text figs. 84, 85 [also issued as N. Y. State Geol., Ann. Rept. 16]—GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 296—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 551—FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 45-46—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 19, 20, 21, 23, 56, 57, 58, 115—WEDEKIND, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 26 (1908) p. 577—GÜRICH, Leitfossilien des Devons, Leitfossilien (1909) p. 124—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135—WEDEKIND, Centr. f. Min., Geol. und Pal., Jahrg. 1910 (1910) p. 768-771—SMITH, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 630, text fig. 1174—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 15—DYBCZYŃSKI, Kosmos, rocznik 38 (1913) p. 518-519—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 135-137—SHANNON, Devon. Assoc., Tr., vol. 53 (1921) p. 249-250—SCHINDEWOLF, Senckenbergiana, Bd. 4, Heft 6 (1922) p. 189—BROILI, Zittel-Broili Grundz. Pal., Abt. 1, Bd. 2, ed. 6 (1924) p. 550—MATERN, Preuss. Geol. Landes., Abh., N. F., Heft 134 (1931) p. 26—SCHINDEWOLF, Preuss. Geol. Landes., Abh., N. F., Heft 148 (1933) p. 103; Deutsch. geol. Ges., Zeitschr., Bd. 88 (1937) p. 689; MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 140-144.

Epitornoceras FRECH, Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients, Bd. 14 (1902) p. 51-53; Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 19—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 117—SCHINDEWOLF, Preuss. geol. Landes., Abh., N. F., Heft 148 (1933) p. 103—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 140. [Genotype, *Goniatites mithracoides* FRECH.]

Parodoceras ["*Parodoceras*"] HYATT (subgenus) Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 319-320—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 418—HOLZAPFEL, K. preuss. geol. Landes., Abh., N. F., Heft 16 (1895) p. 80-85—FOORD and CRICK, Cat. foss. Cephalopoda in British Mus., pt. 3 (1897) p. 91, 92—CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 109-110, 121 [also issued as N. Y. State Mus., Ann. Rept. 50, vol. 2]—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 551—SMITH, U. S. Geol. Survey, Mon. 42 (1903) p. 20, 21, 23, 56, 57, 72, 73; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 631—MATERN, Preuss. geol. Landes., Abh., N. F., Heft 134 (1931) p. 26—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 142-143. [Genotype, *Goniatites discoideus* HALL.] [Not *Parodoceras* WEDEKIND, 1913, 1918.]

Protornoceras DYBCZYŃSKI (subgenus) Kosmos, rocznik 38 (1913) p. 512-513—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 138—SCHINDEWOLF, Senckenbergiana, Bd. 4, Heft 6 (1922) p. 188—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 142, 143. [Genotype, *Protornoceras polonicum* DYBCZYŃSKI.]

Pernoceras SCHINDEWOLF [synonym of *Protornoceras*] Senckenbergiana, Bd. 4, Heft 6 (1922) p. 188; Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 49 (1923) p. 310—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 142. [Genotype, *Tornoceras kochi* WEDEKIND.]

Polonoceras DYBCZYŃSKI (subgenus) Kosmos, rocznik 38 (1913) p. 519-520—WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 137—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 142, 144. [Genotype, *Polonoceras planum* DYBCZYŃSKI.]

Aulatornoceras SCHINDEWOLF (subgenus) Senckenbergiana, Bd. 4, Heft 6 (1922) p. 188—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 142, 144. [Genotype, *Goniatites auris* QUENSTEDT.]

TORNOCERAS (*PERNOCERAS*) Schindewolf =
TORNOCERAS (*PROTORNOCERAS*)

***Tornoceras bicostatum* (Hall) = *Tornoceras* (*Aulatornoceras*) *bicostatum*
Tornoceras (*Aulatornoceras*) *bicostatum* (Hall)**

Goniatites bicostatus HALL, Geol. N. Y., pt. IV, Comprising the survey of the fourth geological district (1843) p. 246, text fig. 107 (8); N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 103, text figs. 19, 20—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 16, fig. 11—HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 72, figs. 8–10 [not 6, 7], pl. 74, fig. 1 [part]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 450–453, pl. 72, figs. 8–10, pl. 74, fig. 1—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 49—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 255, text fig.—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 328–329—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Tornoceras bicostatum HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 321—CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 54; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 54; N. Y. State Geol., Ann. Rept. 16 (1899) p. 118–120, text figs. 97–99, pl. 8, figs. 4–13 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 651–652—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 346, text fig. 16; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 346, text fig. 16—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18–19—BURGESS, Mus. Comp. Zool., Bull., Vol. 72 (1931) p. 200—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 317, 322, 325.

Goniatites (*Tornoceras*) *bicostatus* GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 297–298, text fig. 232.

Tornoceras (*Aulatornoceras*) *bicostatum* MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 45 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 167–170, text fig. 35, pl. 14, figs. 4, 5, pl. 30, figs. 1–10, pl. 32, figs. 1–4.

Naples, Chemung, and Canadaway (Gowanda member): New York; and possibly the Kiln shale of Alberta.

***Tornoceras* (*Tornoceras*) *buttsi* Miller**

Tornoceras (*Tornoceras*) *buttsi* MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 147–148, text fig. 31, pl. 33, fig. 1.

Onondaga: near Newcastle, Va.; and possibly the basal part of the Romney of Maryland.

***Tornoceras crebriseptum* Raymond = *Tornoceras* (*Tornoceras*) *crebriseptum* and
*Raymondiceras simplex***

***Tornoceras* (*Tornoceras*) *crebriseptum* Raymond**

Cheiloceras 2 spp. RAYMOND [HOLZAPFEL], Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 118, 120.

Cheiloceras or *Tornoceras* sp. RAYMOND, Am. Jour. Sci., 4th ser., vol. 23 (1907) p. 119.

Tornoceras crebriseptum RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 153–154, text fig. 4, pl. 8, figs. 5–7 [not 8]—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 27—SCHINDEWOLF, Neues Jahrb. f. Min., Geol. und Pal., Beil.-Bd. 72, Abt. B (1934) p. 333–335, text fig. 1.

Tornoceras sp. RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 154–155, text fig. 5, pl. 8, fig. 4; Int. Zool. Cong., Seventh, Pr., advance print (1910) p. 2; Int. Zool. Cong., Seventh, Pr. (1912) p. 742.

Tornoceras douglassi RAYMOND, Carnegie Mus., Ann., vol. 5 (1909) p. 155–156, text fig. 6, pl. 8, figs. 9–14—HAYNES, Carnegie Mus., Ann., vol. 10 (1916) p. 27.

Tornoceras (*Tornoceras*) *crebriseptum* MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 37 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 149–151, text fig. 32, pl. 38, figs. 7–16.

Three Forks: Three Forks, Montana.

Tornoceras discoideum (Hall) = **Tornoceras (Parodoceras) discoideum** and **Tornoceras (Tornoceras) uniangulare**

Tornoceras (Parodoceras) discoideum (Hall)

Goniatites sinuosus [part] HALL, Geol. N. Y., pt. 4, Comprising the survey of the fourth geological district (1843) p. 244, 246.

Goniatites discoideus HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 97-98, text figs. 3-5 [not 6]—LINCKLAEN, N. Y. State Cab. Nat. Hist., Ann. Rept. 14, appd. B (1861) pl. 11A, figs. 1, 2—HALL, Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 4 [part]; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 136 [part]; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 71, figs. 2-6, 8, 9 [not 1, 7, 10-13], pl. 74, fig. 3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 441-444, pl. 71, figs. 2-6, 8, 9 [not 1-7, 10, 13], pl. 74, fig. 3 [not 4]—WILLIAMS, N. Y. State Geol., Ann. Rept. 6 (1887) p. 28—KINDLE, Bull. Am. Pal., vol. 2, no. 6 (1896) p. 17—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331 [part]—TALBOT, Am. Jour. Sci., 4th ser., vol. 16 (1903) p. 150—GRABAU [PROSSER and ROWE?], N. Y. State Mus., Bull. 92 (1906) p. 294—WILLIAMS, U. S. Geol. Survey, Prof. Pap. 79 (1913) p. 12—SAVAGE, Ky. Geol. Survey, 6th ser., vol. 36 (1931) p. 228.

Parodoceras ["*Parodoceras*"] *discoideum* HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 320 [part]—BEECHER, Am. Jour. Sci., 3d ser., vol. 40 (1890) p. 72 [part]—CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 109-110, 121, text fig. 84 [also issued as N. Y. State Mus., Ann. Rept. 50]; N. Y. State Mus., Bull. 49 (1901) p. 125—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 646-647 [part]—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 211, 212, text fig. 158—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 138, text fig. 1391—KINDLE, U. S. Geol. Survey, Bull. 508 (1912) p. 47, 106—SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 91—SWARTZ and PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 108—PROSSER and KINDLE, Md. Geol. Survey, Middle and Upper Devonian, p. 323-326, pl. 42, fig. 7 [not 8]—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 168, 172, 179, 237—REGGER, W. Va. Geol. Survey, County Repts., Mineral and Grant counties (1924) p. 750—GOLDRING, N. Y. State Mus., Handb. 14 (1933) text fig. 27G—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859—GOLDRING, N. Y. State Mus., Bull. 303 (1935) p. 152, 156, 158, 172, text fig. 57M—FLOWER, Bull. Am. Pal., vol. 22 (1936) p. 280, 284.

Tornoceras discoideum HOLZAPFEL, K. preuss. geol. Landes., Abh., N. F., Heft. 16 (1895) p. 81-85—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 46—KINDLE, Jour. Geol., vol. 14 (1906) p. 189—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 16; N. Y. State Mus., Bull. 137 (1910) p. 20—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18 [part].

Goniatites (Parodoceras) discoideus GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329.

Agoniatites discoideus STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 69, 168—GRABAU [Stauffer] Mich. Geol. Biol. Survey, Publ. 12, geol. ser. 9 (1913) p. 376.

Tornoceras (Parodoceras) discoideum MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 36 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 144-147, text fig. 30B, pl. 32, figs. 11-16.

Cherry Valley limestone member of Marcellus: central New York; and possibly the Naples of New York, the Genesee of Pennsylvania, the Tully of New York, the Hamilton of New York and Ontario, the Marcellus of New York and West Virginia, and the Onondaga of Maryland, Virginia, Kentucky, and Ohio.

Tornoceras douglassi Raymond = **Tornoceras (Tornoceras) crebriseptum**

Tornoceras edwin-halli Clarke = **Tornoceras (Tornoceras) edwin-halli**

Tornoceras (Tornoceras) edwin-halli Clarke

Tornoceras edwin-halli CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 111, text fig. 85 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 652—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18—CHADWICK, Geol. Soc. Am., Pr. for 1933 (1934) p. 350; Geol. Soc. Am., Bull., vol. 46 (1935) p. 327.

Tornoceras (Tornoceras) edwin-halli MILLER, Type invertebrate fossils of North

America (Devonian), *Ammonoidea* 38 (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 151-152, pl. 31, figs. 10, 11.

Chagrin or Volusia member of Conneaut: Nile, N. Y.

Tornoceras (*Tornoceras*) iowaense Miller

Tornoceras (*Tornoceras*) *iowaense* MILLER, *Pan.-Am. Geol.*, vol. 65 (1936) p. 337 [*nomen nudum*]; *Iowa Acad. Sci., Pr.*, vol. 43 (1938) p. 231, 234, pl. 1, figs. 13-15 [*nomen nudum*]; *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 152-153, pl. 34, fig. 5, pl. 35, figs. 7, 8.

Cedar Valley limestone: Linn Co., Iowa.

Tornoceras mithrax (Hall) = **Tornoceras (*Tornoceras*) mithrax**

Tornoceras (*Epitornoceras*) mithrax (Hall) = **Tornoceras (*Tornoceras*) mithrax**

Tornoceras (*Tornoceras*) mithrax (Hall)

Goniatites mithrax HALL, *N. Y. State Cab. Nat. Hist., Ann. Rept.* 13 (1860) p. 98, text fig. 7; *N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda* (1876) pl. 69, fig. 7, pl. 74, fig. 14; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 433-434, pl. 69, fig. 7, pl. 74, fig. 14—WHITFIELD and HOVEY, *Am. Mus. Nat. Hist., Bull.*, vol. 11 (1900) p. 330-331.

Tornoceras mithrax HYATT, *Boston Soc. Nat. Hist., Pr.*, vol. 22 (1883) p. 321—STAUFFER, *Ohio Geol. Survey, 4th ser., Bull.* 10 (1909) p. 169.

Tornoceras (*Epitornoceras*) *mithrax* FRECH, *Beitr. Pal. und Geol. Oesterreich-Ungarns und Orients*, Bd. 14 (1902) p. 51; *Fossilium Catalogus, I, Animalia, pars 1* (1913) p. 19.

Tornoceras (*Tornoceras*) *mithrax* MILLER, *Type invertebrate fossils of North America (Devonian), Ammonoidea* 39 (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 153-154, pl. 25, figs. 9, 10.

Columbus: Columbus, Ohio.

Tornoceras Ohioense (Hall and Whitfield) = **Tornoceras (*Tornoceras?*) whitfieldi**

Tornoceras? (*Tornoceras?*) orbicella (Hall)

Goniatites orbicella HALL, *N. Y. State Cab. Nat. Hist., Ann. Rept.* 13 (1860) p. 99, text fig. 8; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 447.

Tornoceras? (*Tornoceras?*) *orbicella* MILLER, *Type invertebrate fossils of North America (Devonian), Ammonoidea* 40 (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 154-155, pl. 14, fig. 18.

Hamilton: Ludlowville, N. Y.

Tornoceras peracutum (Hall) = **Tornoceras (*Tornoceras*) peracutum**

Tornoceras (*Epitornoceras*) peracutum (Hall) = **Tornoceras (*Tornoceras*) peracutum**

Tornoceras (*Tornoceras*) peracutum (Hall)

Goniatites peracutus HALL, *N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda* (1876) pl. 69, fig. 8, pl. 74, fig. 13; *Pal. N. Y.*, vol. 5, pt. 2 (1879) p. 463-464, pl. 69, fig. 8, pl. 74, fig. 13—CLARKE, *U. S. Geol. Survey, Bull.* 16 (1885) p. 50.

Tornoceras peracutum CLARKE, *N. Y. State Geol., Ann. Rept.* 15 (1897) p. 54; *N. Y. State Mus., Ann. Rept.* 49, vol. 2 (1898) p. 54; *N. Y. State Geol., Ann. Rept.* 16 (1899) p. 118, text fig. 96 [also issued as *N. Y. State Mus., Ann. Rept.* 50]—CLARKE and RUEDEMANN, *N. Y. State Mus., Bull.* 65 (1903) p. 652—CLARKE, *N. Y. State Mus., Mem.* 6 (1904) p. 361; *N. Y. State Mus., Ann. Rept.* 57, vol. 3, appd. 8 (1905) p. 361—Raymond, *Carnegie Mus., Ann.*, vol. 5 (1909) p. 156.

Tornoceras (*Epitornoceras*) *peracutum* FRECH, *Fossilium Catalogus, I, Animalia, pars 1* (1913) p. 19.

Parodicerias? *peracutum* CHADWICK, *Geol. Soc. Am., Bull.*, vol. 46 (1935) p. 315.

Tornoceras (*Tornoceras*) *peracutum* MILLER, *Type invertebrate fossils of North America (Devonian), Ammonoidea* 41 (1936); *Geol. Soc. Am., Spec. Pap.* 14 (1938) p. 155-156, pl. 31, figs. 1, 2.

Naples: Ithaca, N. Y.

Tornoceras rhysum Clarke = **Tornoceras (Tornoceras) rhysum** Clarke

Tornoceras (Tornoceras) rhysum Clarke

Tornoceras rhysum CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 121, text fig. 100, pl. 8, fig. 14 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 652—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 361; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 361—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 19—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 320.

Tornoceras (Tornoceras) rhysum MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 42 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 156-157, text fig. 33, pl. 30, fig. 11.

Hanover shale member of Chemung: Java, N. Y.

Tornoceras simplex (VON BUCH) [part] = **Tornoceras (Tornoceras) uniangulare**

Tornoceras uniangulare (Conrad) = **Tornoceras (Tornoceras) uniangulare**

Tornoceras (Tornoceras) uniangulare (Conrad)

Goniatites uniangularis CONRAD, Philadelphia Acad. Nat. Sci., Jour., vol. 8 (1842) p. 268, pl. 16, fig. 4—HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 98, text fig. 6 (bis); Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 4—NICHOLSON, Report upon the palaeontology of the Province of Ontario (1875) p. 83—HALL, N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) p. 136; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 71, fig. 14, pl. 74, fig. 2—HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 444-446, pl. 71, fig. 14, pl. 72, figs. 6, 7, pl. 74, fig. 2—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 48—HALL, N. Y. State Geol., Ann. Rept. 5 (1886) pl. (127) 12, fig. 10—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39, pl. 127, fig. 10—WHITEAVES, Can. Geol. Survey, Contr. Can. Pal., vol. 1, pt. 5 (1898) p. 417—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331—HOUGHTON, Buffalo Soc. Nat. Sci., Bull., vol. 11 (1914) p. 91.

Goniatites discoideus [part] HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 97-98, text fig. 6 [not 3-5]; Descriptions of new species of Goniatidae, with a list of previously described species (1874) p. 4; N. Y. State Mus., Nat. Hist., Ann. Rept. 27 (1875) p. 136; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 71, figs. 1, 7, 10-13 [not 2-6, 8, 9]; Pal. N. Y., vol. 5, pt. 2 (1879) p. 441-444, pl. 71, figs. 1, 7, 10-13 [not 2-6, 8, 9], pl. 74, fig. 4 [not 3]—CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 48—HALL, N. Y. Geol. Survey, Ann. Rept. 5 (1886) pl. 127 (12), figs. 11, 12—BEECHER, Pal. N. Y., vol. 5, pt. 2, suppl. (1888) p. 39, pl. 127, figs. 11, 12—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331.

Goniatites bicostatus [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 72, figs. 6, 7 [not 8-10].

Parodoceras ["*Parodicerias*"] *discoideum* [part] HYATT, Boston Soc. Nat. Hist., Proc., vol. 22 (1883) p. 320—BEECHER, Am. Jour. Sci., 3d ser. (1890) vol. 40, p. 72—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 646-647—KINDLE, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 323-326, pl. 42, fig. 8 [not 7].

Tornoceras uniangulare HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 321—BEECHER, Am. Jour. Sci., 3d ser., vol. 40 (1890) p. 71-75, pl. 1, figs. 1-14—CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 38, 54, 66, 73, 79, 80; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 38, 54, 66, 73, 79, 80; N. Y. State Geol., Ann. Rept. 16 (1899) p. 111-116, text figs. 86-95, pl. 8, figs. 15, 16 [also issued as N. Y. State Mus., Ann. Rept. 50]—N. Y. State Mus., Bull. 49 (1901) p. 135-136—LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 916, 919, pl. 5, fig. 3—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 652-653—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 48, 51, 57, 61, 62—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 370, 381; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 370, 381—LUTHER, N. Y. State Mus., Bull. 128 (1909) p. 19, 31—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 135, text figs. 1389d, 1389e—LUTHER, N. Y. State Mus., Bull. 152 (1911) p. 10, 12, 13—KINDLE, Jour. Geol., vol. 19 (1911) p. 348—SWARTZ, U. S. Geol. Survey, Geol. Atlas of U. S., folio 179 (1912) p. 11, 12—PROSSER, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 371, 372—SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913) p. 412, 413, 444—CLARKE and SWARTZ, Md. Geol. Survey, Middle and Upper Devonian (1913)

p. 696-697, pl. 72, fig. 6—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18—WILLIAMS, Int. Geol. Cong., Twelfth, Guide Book 4 (1913) p. 102, 110—LUTHER, N. Y. State Mus., Bull. 172 (1914) p. 14, 21, 23, 25, 27, 28—WILLIAMS, Can. Geol. Survey, Summ. Rept. for 1912 (1914) p. 284—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 145, 161, 168, 172, 179, 182, 226, 237; Jour. Geol., vol. 24 (1916) p. 478, 483—GRABAU, Jour. Geol., vol. 25 (1917) p. 342—BUTTS, Va. Geol. Survey, Bull. 27 (1927) p. 10—TILTON, Am. Jour. Sci., 5th ser., vol. 17 (1929) p. 350—STEWART, Ohio Jour. Sci., vol. 30 (1930) p. 56, pl. 1, figs. 8, 9—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 313, 318—COOPER and WILLIAMS, Geol. Soc. Am., Bull., vol. 46 (1935) p. 859.

Goniatites astarte CLARKE, U. S. Geol. Survey, Bull. 16 (1885) p. 29, pl. 2, figs. 9, 10—LESLEY, Pa. Geol. Survey, Rept. P4, vol. 1 (1889) p. 254, text fig.

Tornoceras simplex [part] HOLZAPFEL, K. preuss. geol. Landes., Abh., N. F., Heft 16 (1895) p. 95.

Tornoceras uniangulare obesum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 54 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 54 [*nomen nudum*]; N. Y. State Geol., Ann. Rept. 16 (1899) p. 116, pl. 8, fig. 17 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 653—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 61—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 358, 361, 371; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 358, 361, 371—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 315.

Tornoceras uniangulare compressum CLARKE, N. Y. State Geol., Ann. Rept. 15 (1897) p. 54 [*nomen nudum*]; N. Y. State Mus., Ann. Rept. 49, vol. 2 (1898) p. 54; N. Y. State Geol., Ann. Rept. 16 (1899) p. 116-118, pl. 8, fig. 18 [also issued as N. Y. State Mus., Ann. Rept. 50]—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 653—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 59—CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 359, 361, 371; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 359, 361, 371—FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 311.

Goniatites (Tornoceras) uniangularis GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 296-297, text fig. 231.

Goniatites (Tornoceras) uniangularis obesum GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 297.

Goniatites (Tornoceras) uniangularis compressum GRABAU, Buffalo Soc. Nat. Sci., Bull., vol. 6 (1899) p. 297.

Tornoceras uniangulare astarte LOOMIS, N. Y. State Mus., Bull. 69 (1903) p. 916-917, 919, pl. 5, figs. 1, 2—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 57—CHADWICK, Geol. Soc. Am., Bull., vol. 46 (1935) p. 313, 318.

Tornoceras discoideum [part] FRECH, Fossilium Catalogus, I, Animalia, pars 1 (1913) p. 18.

Tornoceras (Tornoceras) uniangulare MILLER, Pan-Am. Geol., vol. 65 (1936) p. 336-337; Type invertebrate fossils of North America (Devonian), Ammonoidea 43 (1936); Geol. Soc. Am., Bull., vol. 48 (1937) p. 1254; Iowa Acad. Sci., Pr., vol. 43 (1938) p. 231, pl. 1, fig. 16; Geol. Soc. Am., Spec. Pap. 14 (1938) p. 157-166, text figs. 30C, 34, pl. 31, figs. 5-9, pl. 32, figs. 5-10, pl. 33, figs. 3-6, pl. 34, figs. 1-4, pl. 35, figs. 1-3, 5, 6.

Late Middle and early Upper Devonian (Marcellus to Naples): New York, Ontario, Pennsylvania, West Virginia, Virginia, Ohio, Iowa, Michigan, and Alberta.

Tornoceras uniangulare astarte* (Clarke) = *Tornoceras (Tornoceras) uniangulare

Tornoceras uniangulare compressum* Clarke = *Tornoceras (Tornoceras) uniangulare

Tornoceras uniangulare obesum* Clarke = *Tornoceras (Tornoceras) uniangulare

Tornoceras whitfieldi* Miller = *Tornoceras (Tornoceras?) whitfieldi

***Tornoceras (Tornoceras?) whitfieldi* Miller**

Goniatites discoideus ohioensis HALL and WHITFIELD, Description of new species of fossils, from the vicinity of Louisville, Kentucky, and the Falls of the Ohio (1872) p. 13 [a *nomen nudum* ascribed to Hall]; N. Y. State Mus. Nat. Hist., Ann. Rept. 24 (1872) p. 200 [a *nomen nudum* ascribed to Hall]; N. Y. State Mus. Nat. Hist., Ann. Rept. 27 (1875) pl. 13, figs. 18, 19—KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1901) p. 744. [Not *Goniatites ohioensis* WINCHELL, 1871.]

Tornoceras Ohioense CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 117, 121 [also issued as N. Y. State Mus., Ann. Rept. 50].

Tornoceras whitfieldi MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 331.

Tornoceras (Tornoceras?) whitfieldi MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 44 (1936); Geol. Soc. Am., Spec. Paper 14 (1938) p. 167, pl. 31, figs. 3, 4.

Sellersburg limestone: Falls of Ohio; and possibly Lexington, Ind.

TREMATOCERAS Whitfield = *TYLORTHO CERAS*

Trematoceras ohioense Whitfield = *Tylorthoceras ohioense*

TRIAINOCERAS ["*TRIAENOCERAS*"] Hyatt = *SANDBERGEROCERAS*

TRIGONOCLYMENIA Schindewolf = *PLATYCLYMENIA*

(*TRIGONOCLYMENIA*)

TRIPLEUROCERAS Hyatt (Jovellanidae)

GENOTYPE: *Orthoceras archiaci* Barrande

Tripleuroceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 289—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 370—HYATT, Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 529; Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 610—BASSLER, U. S. Nat. Mus., Bull. 92, vol. 2 (1915) p. 1294—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab. vol. 21 (1925) p. 5, 308-311, pl. 32, figs. 4A-4D, pl. 33, figs. 2A-3C.

Jovellania [part] FOORD, Cat. Foss. Ceph. in British Mus., pt. 1 (1888) p. 326.

Tripleuroceras boreale Foerste

Tripleuroceras boreale FOERSTE, Ontario Dept. Mines, Ann. Rept. 37, vol. 39, pt. 6 (1929) p. 72, pl. 1, figs. 3A-3C.

Abitibi River: French River, Ontario.

Trochoceras andersonense Grabau = *Mitroceras? andersonense*

Trochoceras barrandei Hall = *Naedyceras? barrandei*

Trochoceras biton Hall = *Tyrrelloceras? biton*

Trochoceras clio Hall = *Sphyradoceras clio* and *S. discoideum*

Trochoceras discoideum Hall = *Sphyradoceras discoideum* and *S. clio*

Trochoceras (Sphyradoceras) discoideum Hall = *Sphyradoceras discoideum*

Trochoceras eugenium Hall = *Naedyceras eugenium*

Trochoceras expansum Hall = *Naedyceras? expansum*

Trochoceras gebhardii Hall = *Trochoceras gebhardii*

Trochoceras obliquatum Hall = *Naedyceras? obliquatum* and *N.? expansum*

Trochoceras orion (Hall) = *Naedyceras olenus*

Trochoceras pandion Hall = *Naedyceras? pandion*

TURNOCERAS Foerste (Poterioceratidae)

GENOTYPE: *Cyrtoceras turnus* Barrande

Turnoceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 342, pl. 53, figs. 2A-2C—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 41.

Turnoceras absens (Hall)

Cyrtoceras absens HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 47, figs. 7, 8.

Gomphoceras absens [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 324-325, pl. 46, figs. 8, 9—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 589-590—CLARKE and LUTHER, N. Y. State Mus., Bull. 63 (1904) p. 42—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 69-70.

Turnoceras absens FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 41-43, pl. 4, figs. 18, 19.

Schoharie: Schoharie, N. Y.; and possibly the Onondaga of New York.

TYLORTHO CERAS Miller (Orthocerotidae)

GENOTYPE: *Trematoceras ohioense* Whitfield

Trematoceras WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 205—MILLER, North American geology and palaeontology for the use of amateurs, students, and scientists (1889) p. 455—WHITFIELD, N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 528; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 426-427—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 55. [Not *Trematoceras* EICHWALD, 1851; nor *Trematoceras* HYATT, 1883.]

Tylorthoceras MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 330.

Tylorthoceras ohioense (Whitfield)

Trematoceras ohioense WHITFIELD, N. Y. Acad. Sci., Ann., vol. 2 (1882) p. 206, 242; N. Y. Acad. Sci., Ann., vol. 5 (1891) p. 528-529, pl. 10, figs. 3, 4; Ohio Geol. Survey, Rept., vol. 7 (1893) p. 427, pl. 6, figs. 3, 4—STAUFFER, Ohio Geol. Survey, 4th ser., Bull. 10 (1909) p. 169—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 55, text figs. 1254c, 1254d—GRABAU, Mich. Geol. and Biol. Survey, geol. ser. 9, Pub. 12 (1913) p. 358—STAUFFER, Ohio Geol. Survey, Mem. 34 (1915) p. 248—SHERZER, U. S. Geol. Survey, Geol. Atlas of U. S., folio 205 (1917) p. 7.

Tylorthoceras ohioense MILLER, Am. Jour. Sci., 5th ser., vol. 24 (1932) p. 330.

Columbus: central Ohio; and possibly the Dundee of southern Michigan and the Onondaga of Ontario.

TYRRELLOCERAS Foerste (Orthocerotidae)

GENOTYPE: *Trochoceras insigne* Whiteaves

Tyrrelloceras FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1925) p. 56-57; Jour. Sci. Lab., vol. 22 (1927) p. 59.

Tyrrelloceras? auriculum (Parks)

Hercoceras auriculum PARKS, Ontario Bur. Mines, Rept. for 1904, vol. 13, pt. 1 (1904) p. 190, pl. 6, figs. 5, 6.

[Note: This species appears to be congeneric with *Trochoceras biton* Hall, and these two forms, although somewhat similar to the genotype of *Tyrrelloceras*, probably are generically distinct from it.]

Middle? Devonian: Kwataboahagan River, Ontario.

Tyrrelloceras? biton (Hall)

Trochoceras biton HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 395-396, pl. 111, fig. 7—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 654—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327.

[Note: This species appears to be congeneric with *Hercoceras auriculum* PARKS, and these two forms, although somewhat similar to the genotype of *Tyrrelloceras*, probably are generically distinct from it.]

Schoharie: Schoharie and Albany counties, N. Y.

VERTICOCERAS Flower (Poterioceratidae)

GENOTYPE: *Verticoceras erectum* Flower

Verticoceras FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 72; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 60.

Verticoceras? clavatum (Hall)

Cyrtoceras clavatum HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 47, figs. 12, 13.

Gomphoceras clavatum HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 323-324, pl. 46, figs. 14, 15, pl. 93, figs. 2, 3—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 327—FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 73.

Gomphoceras (Poterioceras) clavatum CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 590.

Poterioceras clavatum STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 140.

Alpenoceras? clavatum FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 190, 205-206.

Verticoceras? clavatum FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 69.

[Note: The above citations refer to several distinct species, all of which are probably not congeneric.]

Schoharie: Albany and Schoharie counties, N. Y.; and possibly the Middle Devonian of Ontario.

Verticoceras conradi (Hall)

Gomphoceras (Apioceras) Conradi HALL, N. Y. State Cab. Nat. Hist., Ann. Rept. 13 (1860) p. 106; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) pl. 8, fig. 8.

Cyrtoceras Conradi [part] HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 47, figs. 1, 2 [not 11].

Gomphoceras conradi [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 348-349, pl. 46, figs. 1, 2 [not 3]—CLARKE, N. Y. State Mus., Bull. 49 (1901) p. 124—GRABAU, N. Y. State Mus., Bull. 92 (1906) p. 329—STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 128.

Poterioceras conradi STAUFFER, Can. Geol. Survey, Mem. 34 (1915) p. 148.

Alpenoceras conradi FOERSTE, Univ. Mich., Mus. Geol., Contr., vol. 2 (1927) p. 190, 205-206.

Verticoceras conradi FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 74-75; Palaeontographica Americana, vol. 2, no. 9 (1938) p. 16, 60, 73.

Cherry Valley limestone member of Marcellus: Schoharie and Manlius, N. Y.; and possibly the Middle Devonian of Ontario.

Verticoceras erectum Flower

Gomphoceras conradi [part] HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 348-349, pl. 46, fig. 3 [not 1, 2].

Verticoceras erectum FLOWER, Bull. Am. Pal., vol. 22, no. 76 (1936) p. 72-73, pl. 9, figs. 6, 7—Palaeontographica Americana, vol. 2, no. 9 (1938) p. 7, 16, 60, 73.

Cherry Valley limestone member of Marcellus: Schoharie and Manlius, N. Y.

Verticoceras tullium Flower

Verticoceras tullium FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 60, pl. 4, figs. 14, 15.

Tully: Borodino, N. Y.

WERNEROCERAS Wedekind (Anarcestidae)

GENOTYPE: *Goniatites ruppachensis* Kayser

Werneroceras WEDEKIND, Palaeontographica, Bd. 62 (1918) p. 107, 108—SCHINDEWOLF, Preuss. geol. Landes., Abh., N. F., Heft. 148 (1933) p. 96-98—MILLER, Geol. Soc. Am., Spec. Pap. 14 (1938) p. 57-58.

Werneroceras plebeiforme (Hall)

Porcellia? rotatoria HALL, N. Y. Geol. Survey, Illustrations of Devonian fossils, Gasteropoda (1876) pl. 16, figs. 25, 26. [Not *Goniatites rotatorius* BRONN, 1848.]

Goniatites plebeiformis HALL, Pal. N. Y., vol. 5, pt. 2 (1879) p. 448-450, pl. 16, figs. 25, 26, pl. 110, figs. 3-9—WHITFIELD and HOVEY, Am. Mus. Nat. Hist., Bull., vol. 11 (1900) p. 330-331.

Anarcestes plebeiformis CLARKE, N. Y. State Geol., Ann. Rept. 16 (1899) p. 165-168, text figs. 1-5 [also issued as N. Y. State Mus., Ann. Rept. 50]; N. Y. State Mus., Bull. 49 (1901) p. 122—CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 575-576.

Werneroceras plebeiforme SCHINDEWOLF, Preuss. geol. Landes., Abh., N. F., Heft 148 (1933) p. 98—MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 13 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 58-61, text figs. 7-9, pl. 5, figs. 1-6.

Cherry Valley member of Marcellus: near Cherry Valley, N. Y.

Werneroceras wabashense (Kindle)

Goniatites wabashensis KINDLE, Ind. Dept. Geol. and Nat. Res., Ann. Rept. 25 (1901) p. 563, 577, pl. 2, figs. 4, 4a.

Gephuroceras? wabashense CLARKE, N. Y. State Mus., Mem. 6 (1904) p. 374; N. Y. State Mus., Ann. Rept. 57, vol. 3, appd. 8 (1905) p. 374.

Werneroceras wabashense MILLER, Type invertebrate fossils of North America (Devonian), Ammonoidea 14 (1936); Geol. Soc. Am., Spec. Pap. 14 (1938) p. 61-62, pl. 14, figs. 12-14.

Lower part of New Albany: near Delphi, Ind.

WISSENBACHIA Foerste (Poterioceratidae)

GENOTYPE: *Phragmoceras orthogaster* Sandberger and Sandberger

Wissenbachia FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 21 (1926) p. 319-320, pl. 44, figs. 1A-1C—FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 57.

Wissenbachia gebhardi Flower

Wissenbachia gebhardi FLOWER, Palaeontographica Americana, vol. 2, no. 9 (1938) p. 57-58, pl. 1, fig. 4, pl. 4, fig. 2.

Schoharie: Schoharie, N. Y.

ZITTELOCERAS Hyatt (Halloceratidae)

GENOTYPE: *Cyrtoceras halleanum* d'Orbigny

Zitteloceras HYATT, Boston Soc. Nat. Hist., Pr., vol. 22 (1883) p. 284—ZITTEL, Handb. Pal., Abt. 1, Palaeozoologie, Bd. 2 (1884) p. 374—HYATT, Am. Phil. Soc. Pr., vol. 32 (1893) p. 518; Zittel-Eastman Textb. Pal., vol. 1 (1900) p. 522—GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 76—HYATT, Zittel-Eastman Textb. Pal., vol. 1, ed. 2 (1913) p. 603—BROILLI, Zittel-Broilli Grundz. Pal., Abt. 1, ed. 6 (1924) p. 527—FOERSTE, Denison Univ. Bull., Jour. Sci. Lab., vol. 23 (1928) p. 193-199.

Zitteloceras nereus (Hall)

Gyroceras nereus HALL, Descriptions of new species of fossils from the Upper Helderberg, Hamilton, and Chemung groups (1861) p. 39; N. Y. State Cab. Nat. Hist., Ann. Rept. 15 (1862) p. 67, pl. 9, fig. 4; N. Y. Geol. Survey, Illustrations of Devonian fossils, Cephalopoda (1876) pl. 49, figs. 1-3; Pal. N. Y., vol. 5, pt. 2 (1879) p. 373-374, pl. 51, figs. 4-6; N.Y. Assembly Doc. 105 (1886) pl. (124) 9, fig. 4—BEECHER, Pal. N. Y., vol. 5, pt. 2 (1888) p. 36, pl. 124, fig. 4.

Gyroceras (Zitteloceras) nereus CLARKE and RUEDEMANN, N. Y. State Mus., Bull. 65 (1903) p. 596-597.

Zitteloceras nereus GRABAU and SHIMER, North American index fossils, Invertebrates, vol. 2 (1910) p. 76—BRIDGE and CHARLES, Jour. Geol., vol. 30 (1922) p. 456.

Onondaga: Waterloo, Auburn, and Cherry Valley, N. Y.; and possibly the Grand Tower of Missouri.

NORTH AMERICAN DEVONIAN FORMATION NAMES¹

<i>Formation</i>	<i>Regional distribution</i>	<i>System or period</i>
Abitibi River limestone.	Ontario (James Bay region).	U. and M. Devonian.
Acervularia zone of Owen beds.	Central N. Iowa.	U. Devonian.
Agoniatites limestone. A limestone horizon in Marcellus shale lower than Stafford limestone.	New York.	M. Devonian.
Albany granite.	N. New Hampshire.	U. Devonian.
Alfred shale.	W. New York.	U. Devonian.
Allegrippis sandstone member (of Chemung formation).	Central Pennsylvania.	U. Devonian.
Allen County oil sand.	E. Kentucky.	M. Devonian.
Alpena limestone.	N. E. Michigan and Ontario.	M. Devonian.
Alsen cherty limestone.	S. E. New York.	L. Devonian.
Alto formation.	S. W. Illinois.	U. Devonian.
Ames monzodiorite.	New Hampshire.	Devonian or Carboniferous.
Amherstburg dolomite member (of Detroit River dolomite).	Ontario, N. W. Ohio, and S. E. Michigan.	L. Devonian.
Amity shale (of Chemung formation).	N. W. Pennsylvania (Erie Co.).	U. Devonian.
Anderson limestone member (of Detroit River dolomite).	S. E. Michigan, Ontario, and N. W. Ohio.	L. Devonian.
Angola shale.	W. New York.	U. Devonian.
Antrim shale.	Michigan and Ontario (Lower peninsula of Michigan).	U. Devonian.
Apulia member (of Tully formation).	Central New York.	U. (M.) Devonian.
Arkansas novaculite.	Arkansas and Oklahoma.	M. and U. Devonian.
Arkona beds.	S. W. Ontario.	M. Devonian.
Armenia limestone lentil (of Oswayo formation).	Central N. Pennsylvania (Bradford Co.).	Mississippian or U. Devonian.
Armuchee chart.	Georgia.	L. and M. Devonian.
Arthodiran sandstone.	Central Arizona.	U. Devonian.
Ashokan beds. (Nonmarine Hamilton.)	S. E. New York (Ulster and Greene Cos.).	M. Devonian.
Athol shale.	W. New York.	M. Devonian.
Atrypa limestone.	Nevada (Eureka Dist.).	U. Devonian.

¹ Additional data and references to papers, regarding the relations, physical features, and faunal characteristics of these formations may be found in the list of publications at the end of this volume.

Attica shale. Includes Rhine- street shale of Lake Erie re- gion.	W. New York.	U. Devonian.
Atwell sand. Oil horizon.	Central N. Pennsylvania (Tioga Co.).	U. Devonian.
Aulopora zone of Mason City substage.	Central and N. Iowa.	U. Devonian.
"Austin rock." A trade term.	Minnesota (Mower Co.).	Devonian.
Austinburg sand. Correlated with Oriskany sandstone by some and Sylvania by others.	N. E. Ohio.	L. Devonian.
Auxvasse Creek sandstone member (of Callaway lime- stone).	E. Central Missouri.	Devonian.
Avery shale. (A. W. Grabau, 1930.) Equivalent to Led- yard member of G. A. Cooper.	New York.	M. Devonian.
Avilton conglomerate (of Jen- nings formation).	Western Maryland.	U. Devonian.
Back-bone limestone. (Same as Little Saline limestone.)	S. W. Illinois.	L. Devonian.
Bailey limestone.	E. Missouri and S. W. Illi- nois.	L. Devonian.
Bakoven shale.	E. New York. (Catskill Mountains.)	M. Devonian.
Banff limestone and dolomite.	Rocky Mountains of Alberta and E. British Columbia.	U. Devonian with lower half prob- ably M. Devo- nian.
Banff series. Used by R. G. McConnell (1886, p. 362).	W. Alberta.	Carboniferous and Devonian.
Barberie andesite.	New Brunswick.	Devonian.
Barre granite.	N. E. Vermont.	Devonian.
Barre limestone.	Quebec.	Devonian.
Bayard sand. A subsurface sand.	Pennsylvania (Green Co.).	U. Devonian.
Bear Branch limestone member (of Olive Hill formation).	W. Tennessee.	L. Devonian.
Beartooth Butte formation.	N. W. Wyoming.	L. Devonian.
Beauvais sandstone.	Central E. Missouri.	M. Devonian.
Beavertail limestone.	Carcajou Mountain area, Mackenzie River basin.	M. Devonian.
Becraft limestone member (of Helderberg group).	E. New York, Pennsylvania, New Jersey, W. Maryland, West Virginia, and N. Virginia.	L. Devonian.
Bedford shale. Includes Eu- clid sandstone lentil, Euclid "bluestone" (trade name), and Sagamore sandstone member.	N. E. Kentucky, N. E. and S. E. Ohio, and S. W. Pennsylvania. (In wells.)	Mississippian or U. Devonian.

Beechwood limestone member (Butts, 1915) is Sellersburg limestone of Siebenthal (1901). ²	Central N. Kentucky and S. W. Indiana.	M. Devonian.
Belgium member (of Lake Church formation).	S. E. Wisconsin.	Devonian.
Bell shale member of Presque Isle series. (Traverse group.)	Michigan. (Northern part of lower peninsula.)	M. Devonian.
Bella shale. (Keys.)	S. W. New Mexico.	U. Devonian (?).
Bellepoint member (Columbus limestone). In Central Ohio divided into Jefferson sandstone and basal conglomerate of Oriskany (?) age.	N. E. and Central Ohio (Delaware Co.).	M. Devonian.
Bellvale flags.	E. New York.	U. Devonian.
Bellvale sandstone.	S. E. New York.	M. Devonian.
Bellvale sandstone and Bellvale flags.	New Jersey and New York.	M. Devonian.
Benson limestone.	Utah.	Devonian.
Berenda limestone.	New Mexico.	Devonian.
Bernardston formation. (J. D. Dana, 1873.)	Berkshire Hills and Connecticut Valley, Mass., S. E. Vermont, and S. W. New Hampshire.	M. and U. Devonian.
"Bernardston limestone." (J. D. Dana, 1873.) A Helderberg (?) bed in Bernardston formation.	Bernardstown, Mass.	Devonian.
Bertram beds. May represent a phase of the Wapsipinicon.	Iowa (Linn Co.).	Devonian (?).
Berwick quartz diorite.	S. W. Maine.	Devonian (?).
Berwyn member (of Skaneateles shale).	E. Central New York.	M. Devonian.
Bethel granite.	Windsor, Vermont.	Devonian.
Bethlehem gneiss.	N. New Hampshire.	U. Devonian or Carboniferous.
Beulah limestone.	E. Colorado.	Devonian (?).
Big Bend facies.	N. W. Pennsylvania and S. W. New York.	U. Devonian.
"Big Cinnamon." Driller's name. Gas sand at Ironton.	Ohio.	U. Devonian.
Big Mountain shale member (of Keyser limestone).	Central W. Virginia and N. West Virginia.	L. Devonian.
Big Sinking sand. Oil or gas.	E. Kentucky.	M. Devonian.
Big Stone Gap shale. (Restricted by J. H. Swartz to upper part of Chattanooga shale.)	E. or N. E. and S. E. Tennessee and S. W. Virginia. (Type area.)	U. Devonian and Mississippian.

²E. R. Cumings (1922, p. 469), discussing Siebenthal's restriction (1901) of Kindle's Sellersburg formation, observes that "...Kindle's name must be recognized in its original meaning with the Silver Creek and Beechwood (proposed by Butts (1915, 120) for the crinoidal bed) as subdivisions".

Birdsong shale member (of Linden group).	W. Valley of Tennessee River and adjacent areas.	L. Devonian.
"Black shale" of early reports.	New York, Kentucky, Tennessee, Virginia, and other States.	U. Devonian and Mississippian.
Blackface Mountain shale. ³	Alberta.	Devonian.
Equivalent of Kindle's Miette shale (preoccupied).		
Bloody Run Zone. In Shell Rock stage of Cedar Valley limestone.	N. Central Iowa.	U. Devonian.
Bloomsbury formation.	New Brunswick.	Devonian.
Blossburg formation. (In Chemung formation.)	Pennsylvania (Tioga Co.).	U. Devonian.
"Blue Chert series."	Northwestern California.	Devonian (?)
Blue Hill granite porphyry.	E. Massachusetts.	Devonian or Carboniferous.
Blue limestone. Dyer dolomite member Chaffee formation.	Colorado (Leadville District).	U. Devonian.
Blueberry Mountain argillite.	New Hampshire, Ammonoosuc River region.	L. (?) Devonian.
Bois d'Arc limestone.	Central and Southern Oklahoma.	L. Devonian.
Bolton igneous series.	Quebec.	U. Devonian or post Devonian.
"Bone bed." Part of the Delaware limestone as originally defined but included in Columbus limestone since 1890.	Central Ohio.	M. Devonian.
Bosworth sandstone and shale. Preoccupied. Replaced by Carcajou Mountain beds.	Norman-Carcajou Mountain area of Mackenzie River basin. Assumed to be present in Redstone-Dahadinni area, Mackenzie River.	U. Devonian.
Boule formation of Raymond. Equivalent of Miette of Kindle ⁴ and part of Minnewanka limestone.	Jasper Park, Alberta. Type section North end of Miette Range.	U. Devonian.
Boyle limestone. Equivalent of Devonian limestones of S. Indiana. Redefined by T. E. Savage who excluded the Duffin layer.	Central Kentucky.	M. Devonian.
Bradford oil sand group.	N. W. Pennsylvania.	U. Devonian.
Bradfordian series. Beds and faunas, as defined by G. H.	N. W. Pennsylvania and S. W. New York.	U. Devonian and Carboniferous (?).

³ Manuscript name of W. A. Kelley published by J. A. Allan, P. S. Warren, and R. L. Rutherford (1932) *A preliminary study of the eastern ranges of the Rocky Mountains in Jasper Park, Alberta*, Royal Soc. Canada, Tr., vol. 26, sec. 4, p. 234.

⁴ E. M. Kindle (1929), *The succession of fossil faunas in the eastern part of Jasper Park*, Am. Jour. Sci., 5th ser., vol. 18, p. 180-181.

Girty, lying between the Chemung and the Carboniferous. Bradford group of Schuchert and Dunbar is synonymous with Bradfordian.		
Braeburn limestone.	British Columbia.	Devono-Carboniferous.
Braillier shale. In Portage group.	Central Pennsylvania.	U. Devonian.
Bridge River series.	British Columbia.	Devono-Carboniferous.
Bridgewater member. In Marcellus shale.	E. New York.	M. Devonian.
Britannia formation. Probably of Mesozoic or Carboniferous age.	British Columbia.	Devono-Carboniferous (?)
"Brown shale."	Indiana.	Devonian.
Brushy Creek chert.	S. E. Oklahoma.	M. Devonian.
Buchanan Hill conglomerate. (Knapp formation).	N. W. Pennsylvania.	Mississippian or U. Devonian.
Buckskin limestone.	Colorado.	U. Devonian.
Burket black shale member (of Harrell shale).	Central Pennsylvania.	U. Devonian.
Burlington limestone.	Central Northern Pennsylvania.	U. Devonian.
Bushberg sandstone.	Missouri.	Devonian.
Caballos novaculite.	S. W. Texas (Marathon region).	L. Devonian (?)
Caballos novaculite of Baker and Bowman, 1917.	S. W. Texas (Marathon region).	Mississippian and Devonian.
Cache Creek group.	W. British Columbia and Yukon Valley.	Devonian and Carboniferous.
Caddo Gap novaculite.	S. W. Arkansas.	Devonian (?)
Cadent series. Exact synonym of Marcellus.	Pennsylvania.	M. Devonian.
Cadiz beds.	Western New York.	U. Devonian.
Callaway limestone. Originally defined by C. R. Keys, 1894, with Hamilton fossils. E. B. Branson reports it as late Hamilton with beds possibly of Tully age.	Central N. E., Central E., and S. E. Missouri.	U. Devonian (?) M. Devonian.
Cambridge gas sand. In wells.	Central Ohio.	L. Devonian.
Cambridge slate.	E. Massachusetts.	Devonian or Carboniferous.
Camden chert of reports up to 1918.	W. Tennessee.	M. and L. Devonian.
Camden chert. Restricted by Dunbar, 1918.	W. Tennessee.	M. Devonian. (Onondaga.)
Camp Creek series. Replaced by Bosworth sandstone and	N. Canada (Mackenzie District).	U. Devonian.

- shale, and this name by Carcajou Mountain beds.
- Campbellton formation. New Brunswick. L. Devonian.
- Canadaway group. Includes S. W. New York and N. W. U. Devonian.
beds from Dunkirk black Pennsylvania.
- Canandaigua shale. Equiva- West-Central New York. M. Devonian.
lent of upper part of Ludlow-ville shale.
- Canaseraga sandstone. Now Western New York. U. Devonian.
discarded for Dunkirk shale by Chadwick and Bradley.
- Caneadea shale. S. W. New York. U. Devonian.
- Cannel City sand (oil). E. Kentucky. M. Devonian.
- Cape Ann granite. N. E. Massachusetts. Devonian or Car-
boniferous.
- Cape Barre beds. Quebec. L. Devonian.
- Cape Bon Ami beds. Quebec (Gaspé Peninsula). L. Devonian.
- Cape Neddick gabbro. S. W. Maine. Devonian (?)
- Carcajou Mountain beds. Re- Mackenzie River, Canada. U. Devonian.
places Bosworth shale and sandstone. Preoccupied.
- Cardiff shale member (of Mar- New York (W. to E. Cen- M. Devonian.
cellus shale). tral).
- Cardiola shale. Exact syno- Pennsylvania. U. Devonian.
nym of Portage.
- Carper sand. S. Illinois. Devonian or Mis-
sissippian.
- Cascade Creek sandstone. N. E. Pennsylvania. U. Devonian.
(Cascade sandstone.)
- Cascade sandstone. In Che- N. E. Pennsylvania. U. Devonian.
mung formation.
- Cascadilla member (of Ithaca Central New York (Ithaca U. Devonian.
facies subgroup). region).
- Casey limestone. S. Central Kentucky. M. Devonian.
- Cashaqua shale (Portage for- W. and W. Central New U. Devonian.
mation). York.
- Castle Hill andesite. N. E. Maine. Devonian (?)
- Catawissa reds. E. New York (Catskill U. Devonian.
Mountains) and N. E. Pennsylvania.
- Catskill formation. S. E. New York and N. E. U. and M. Devo-
Pennsylvania. nian and Car-
boniferous (?)
- Catskill formation. A facies New York, Maryland, Penn- U. Devonian.
formation, chiefly red sedi- sylvania, and Virginia.
- Cattaraugus formation. In- S. New York and N. Penn- Mississippian or
cludes Kilbuck conglomerate sylvania. U. Devonian.
lentil, Salamanca conglom-
erate member, Wolf Creek
conglomerate lentil.

Cattaraugus parvafacies. <i>See</i> Smithport magnafacies.	Central N. Pennsylvania.	U. Devonian or Mississippian.
"Cauda-galli grit" of Vanuxem (1842) is the Esopus shales or grit of Darton (1894).	E. New York.	L. Devonian.
Cayuta shale member (of Che- mung formation).	Central and W. Central New York.	U. Devonian.
Cazenovia group. (T. A. Con- rad, 1841.)	E. Central New York.	U. Devonian.
Cazenovia shales or group. (C. S. Prosser, 1893.)	E. Central New York.	M. Devonian.
Cedar Rapids phase (of Otis limestone of Norton).	Central E. Iowa.	M. Devonian.
Cedar Valley limestone.	E. Iowa and S. W. Illinois.	U. Devonian.
"Cement shale" Keyes. (Be- long to Chaffee formation.)	W. Colorado.	U. Devonian.
Centerfield limestone member (of Ludlowville shale).	W. and W. Central New York.	M. Devonian.
Cerro Gordo substage. Under- lies Owen substage of Hack- berry stage.	Central N. Iowa.	U. Devonian.
Chadakoin beds member (of Chemung formation).	W. New York and N. W. Pennsylvania.	U. Devonian.
Chaffee formation.	Colorado.	U. Devonian.
Chagrín magnafacies.	N. W. Pennsylvania.	U. Devonian.
Chagrín shale.	N. Ohio.	U. Devonian.
Chancelulla formation.	N. W. California.	Devonian (?).
Chaneysville sandstone mem- ber.	Central Pennsylvania.	M. Devonian.
Chapman sandstone.	Maine.	L. Devonian. (Helderberg.)
Chapman trachyte.	Maine.	Devonian (?).
Charlevoix stage.	N. W. Michigan (Traverse Bay region).	M. Devonian.
Chatham granite.	N. New Hampshire.	Late Devonian or Carboniferous.
Chattanooga series. Earliest of the three divisions of Ul- rich's Waverlyan. ⁵	A time term representing the Chattanooga shale in- terval and its inferred equivalents.	U. Devonian and Mississippian(?)
Chattanooga shale.	Kentucky, S. W. Missouri, E. and S. E. Tennessee, and S. W. Virginia.	Devonian and Mississippian.
Chautauquan group.	New York.	U. Devonian.
Chemung formation.	New York, Pennsylvania, Virginia, and W. Mary- land.	U. Devonian.
Cherry Ridge group (of I. C. White, 1881) (Catskill for- mation).	N. E. Pennsylvania.	U. Devonian or Carboniferous.

⁵ E. O. Ulrich (1911), *Revision of the Palaeozoic systems*, Geol. Soc. Am., Bull., vol. 22, pl. 29.

Cherry Ridge conglomerate.		
" " shales.		
" " sandstone.		
" " limestone.		
" " red shale.		
Cherry Valley limestone member (of Marcellus shale).	Central, W. Central, and E. Central New York.	M. Devonian.
Chittenango member (of Marcellus shale).	Central New York.	M. Devonian.
Chloride formation.	S. W. New Mexico.	Devonian or Mississippian.
Chocorua granite.	N. New Hampshire.	Late Devonian or Carboniferous.
Cincinnatus sandstone—Ithaca shale member in part.	Central New York.	U. Devonian.
Cinquefoil limestone.	Alberta (Interlachen to Palisade).	U. Devonian.
Clam Bank series.	Newfoundland.	L. Devonian.
Clark's Mill beds.	Central Pennsylvania (Perry Co.).	L. Devonian.
Clear Branch sandstone. Represents Oriskany part of original Frog Mountain sandstone.	N. Central Alabama.	L. Devonian.
Clear Creek chert of Savage.	S. E. Missouri and S. W. Illinois.	M. Devonian.
Clear Creek limestone. As originally defined.	S. E. Missouri and S. W. Illinois.	M. and L. Devonian.
Clear Creek series. Said to be associated with Bragdon formation.	N. California.	Mississippian (?) or Devonian.
Cleveland magnafacies.	N. W. Pennsylvania.	U. Devonian or Carboniferous.
Cleveland shale.	N. Ohio.	U. Devonian or Mississippian.
"Cliff limestone" (of early reports).	Central N. Kentucky, S. E. Indiana, and S. W. Ohio.	M. and L. Devonian and Silurian.
Clifton Forge sandstone member (of Keyser limestone).	Central W. Virginia.	L. Devonian. (Helderberg.)
Clifty limestone.	N. W. Arkansas.	M. Devonian.
Cobham conglomerate member.	N. W. Pennsylvania.	Devonian or Carboniferous.
Cobscook series.	S. E. Maine.	Devonian and Silurian.
Coeymans limestone (of Helderberg group).	New Jersey, E. and S. E. New York, Maryland, Pennsylvania, and N. W. Virginia.	L. Devonian.
Coggon limestone as originally defined. Part of Wapsipicon limestone.	Central E. Iowa.	M. Devonian.

Coggon phase (of Otis limestone of Norton).	Central E. Iowa.	M. Devonian.
Colgate member. Skaneateles shale.	E. Central New York.	M. Devonian.
Columbus limestone. Includes Venice member, Marblehead limestone, Bellepoint member, and "bone bed."	Ohio.	M. Devonian.
Combs limestone.	Nevada (Eureka Dist.).	U. Devonian.
Conewango formation.	N. W. Pennsylvania (Warren Co.).	U. Devonian or Mississippian.
Conneaut group.	N. W. Pennsylvania and N. E. Ohio.	U. Devonian.
Connelly conglomerate.	S. E. New York.	L. Devonian.
Conway granite.	N. W. New Hampshire and White Mountains.	U. Devonian or Carboniferous.
Cooper limestone and Cooper marble.	Central and N. E. Missouri.	M. Devonian.
Cooper sand. (Drillers' term.)	N. W. Pennsylvania.	U. Devonian.
Coopers Lake limestone member.	N. W. Montana.	M. Devonian.
Copley meta-andesite.	N. California (Redding Quadrangle).	Devonian or older.
Coralline Falls limestone. An unused term introduced by D. D. Owen, 1856.	Falls of Ohio, Indiana, and Kentucky.	M. Devonian.
Coralville limestone.	Central E. Iowa.	U. Devonian.
Cornell member. Lower Fall Creek gorge zone of <i>Reticularia laevis</i> .	Central New York.	U. Devonian.
"Corniferous" limestone (of early reports).	New York, Michigan, Kentucky, Ohio, Indiana, and Ontario.	M. Devonian.
Corniferous period. Once used by geologists to indicate the time represented by Onondaga limestone, Schoharie grit, and Esopus shales.		M. Devonian.
Cornwall shale member (of Hamilton formation).	S. E. New York and New Jersey.	M. Devonian.
Coronach formation. Represents part of Minnewanka formation.	Jasper Park, Alberta. Type locality a mile south of Disaster Point.	U. Devonian.
Corrigan formation.	N. W. Maryland.	L. Devonian.
Coudersport member (of Cattaraugus formation).	N. Pennsylvania.	U. Devonian or Carboniferous.
Craftsbury granite.	N. E. Vermont.	Devonian.
Craghead Creek shale.	Central Missouri.	U. Devonian.
Craigsville limestone. (Helderberg group.)	Central W. Virginia.	L. Devonian.
Crandall Hill sand. (Drillers' name for a producing horizon.)	Pennsylvania (Potter Co.).	U. Devonian.

Crystal Pass limestone member (of Sultan limestone).	S. E. Nevada.	Devonian.
Cuba sandstone lentil member (of Chemung formation).	W. New York.	U. Devonian.
Cuboides zone. Exact synonym of Tully limestone.	New York.	Base of U. Devonian.
Cumberland Gap shale member (of Chattanooga shale).	S. W. Virginia and S. Tennessee.	U. Devonian and Mississippian.
Cussewago shales of I. C. White (1881) include the following: Cussewago upper shale. " limestone. " middle shales and flags. Cussewago sandstone.	N. W. Pennsylvania.	U. Devonian or Mississippian.
Cussewago stage and Cussewago monothem are terms used by K. E. Caster (1934). <i>See also</i> G. H. Chadwick (1923, 1925).	N. W. Pennsylvania.	U. Devonian or Mississippian.
Cypress Creek chert.	W. Tennessee.	L. Devonian.
Dalhousie shales.	New Brunswick.	L. Devonian.
Dalmanella danbyi zone. Base of Cayuta shale.	New York.	U. Devonian.
Damascus red shale.	N. and Central Pennsylvania.	U. Devonian.
Darby formation. Seems to include Three Forks shale and upper Jefferson limestone.	Yellowstone Park and N. W. Wyoming (Teton Range).	U. and M. Devonian.
Davenport beds (of Wapsipicon limestone).	E. Iowa.	U. and M. Devonian.
Decaturville chert.	W. Tennessee.	L. Devonian. (Helderbergian)
Decewille limestone. Includes Oriskany fauna at base and Onondaga at top.	W. New York.	L. and M. Devonian.
Dedham granite.	N. E. Massachusetts.	Devonian (?) and early Palaeozoic.
Deep Run member. In Ludlowville shale.	W. New York.	M. Devonian.
Deer Lick sand. Drillers' name for an oil sand.	W. Pennsylvania.	U. Devonian.
Delaware limestone.	N. W., N. E., and Central Ohio, and Ontario.	M. Devonian.
Delaware limestone. As originally defined.	Central Ohio.	M. Devonian.
Delaware River flags.	N. E. Pennsylvania.	U. Devonian.
Delhi limestone. Upper part of Columbus limestone.	Central Ohio.	M. Devonian.

Dellville sandstone.	S. Central Pennsylvania (Perry Co.).	U. Devonian.
Delphi black shale. The New Albany shale is the representative in S. Indiana of Delphi black shale.	N. Indiana.	U. Devonian.
Delphi member (of Skaneateles formation).	Central New York.	M. Devonian.
Detroit River dolomite.	S. E. Michigan, W. Ontario, and N. W. Ohio.	L. Devonian.
"Detroit River series" or "Upper Monroe" includes: Lucas dolomite member, Amherstburg dolomite member, Anderdon limestone member, Flat Rock dolomite member.	Ontario peninsula and S. E. part of lower Michigan.	L. Devonian.
Devil's Den sandstone. Discarded by author, G. H. Chadwick.	N. W. Pennsylvania.	U. Devonian or Carboniferous.
Dexterville shale member.	N. W. Pennsylvania and S. W. New York.	U. Devonian.
Dorchester slate member (of Roxbury conglomerate).	E. Massachusetts.	Devonian or Car- boniferous.
Dorset limestone.	Vermont.	Devonian or U. Silurian.
Dublin blue shale.	Central Ohio.	M. Devonian.
Duffin limestone or "Duffin layer"—The fauna suggests a Tully horizon according to T. E. Savage, 1929.	E. Central Kentucky.	U. Devonian.
Dundee limestone.	N. E. and S. E. part Michi- gan, lower peninsula.	M. Devonian.
Dunkirk shale member (of Chemung formation). In S. Central New York, the shale is represented by a sandstone called Dunkirk sandstone.	W. New York.	U. Devonian.
Durham quartz diorite.	S. E. New Hampshire.	Devonian (?).
Dutch Creek sandstone. Grand Tower limestone of Savage and of S. Weller, in part.	S. E. Missouri.	M. Devonian.
Dyberry glomerate.	N. E. Pennsylvania.	U. Devonian or Carboniferous.
Dyer dolomite member (of Chaffee formation).	Central Colorado.	U. Devonian.
East Kane shale member.	N. W. Pennsylvania.	Devonian or Car- boniferous.
Ediger limestone. A subsurface formation.	Central Kansas.	M. Devonian.

Edmunds Hill andesite.	N. E. Maine.	Devonian (?).
Elbert formation.	Central-W. and S. W. Colorado.	U. Devonian.
Elk Mountain shales and sandstones of some reports.	N. E. Pennsylvania.	U. Devonian or Carboniferous.
Elk Mountain transition group. Also called Transition or Sub-Pocono Measures, Pocono-Catskill transition group.	N. E. Pennsylvania.	U. Devonian or Mississippian.
Elk Mountain Upper sandstone.	N. E. Pennsylvania.	U. Devonian or Mississippian.
Elkins sandstone. (Shale and sandstones).	W. Virginia (Randolph Co.).	U. Devonian.
Ellicott shale member.	N. W. Pennsylvania and S. W. New York.	U. Devonian.
Ellicottville conglomerate.	New York (Cattaraugus Co.).	U. Devonian or Mississippian.
Elm Point limestone.	Manitoba.	M. Devonian.
Encrinal limestone. Tichenor limestone is the name later given it.	Central and W. New York.	M. Devonian.
"Encrinal" limestone of early reports is a term used for various crinoidal limestone horizons of Devonian age.		
Endicott diorite.	New Hampshire.	Devonian or Carboniferous.
Enfield facies subgroup (of Ithaca-Enfield facies group).	S. New York (Ithaca region).	U. Devonian.
Enfield shale member (of Portage formation).	Central New York.	U. Devonian.
Erian group. Includes beds between Tully limestone and Onondaga limestone as used by New York State Survey.	New York.	M. Devonian.
Erie series. Includes Onondaga and younger beds to base of Tully limestone as used by C. Schuchert (1910) and by G. H. Ashley (1923).	New York.	M. Devonian.
Erie shale.	N. Ohio.	U. Devonian.
Ermont formation.	S. W. Montana.	Devonian.
Escuminac beds.	Gaspé Peninsula, Quebec.	U. Devonian.
Esopus grit. (Oriskany group in part.)	New York, N. New Jersey, and N. E. Pennsylvania.	L. Devonian.
Esopus shale.	S. E. New York, Central and N. E. Pennsylvania, and N. half of New Jersey.	L. Devonian.
Euclid sandstone lentil. In Bedford shale. Euclid "blue-stone."	N. Ohio.	U. Devonian or Mississippian.

Eureka shale. Chattanooga shale (?).	N. Arkansas.	U. Devonian or Mississippian.
Eversole chert. Zone D part of Columbus limestone.	Central Ohio.	M. Devonian.
Fairview shale. Lower part of Chaffee formation.	Colorado (Pitkin region).	U. Devonian.
Fall Creek conglomerate lentil (of Chemung formation).	N. E. Pennsylvania and S. Central New York (?).	U. Devonian.
Famine series.	Quebec (Chaudière River).	M. Devonian.
Fayette breccia.	N. E., Central, and S. E. Iowa.	M. Devonian.
Ferron Point formation. Fickett series.	N. E. Michigan. N. Central Alaska (John River region).	M. Devonian. Mississippian, Devonian, and Silurian (?).
Fiddle limestone.	Alberta (Jasper Park). Type locality. Gateway in Fiddle Creek.	U. Devonian.
Flagstone series. (N. H. Darton, 1894.)	New York.	Devonian.
Flat Gap limestone member (of Olive Hill formation).	W. Tennessee.	L. Devonian.
Flat Rock dolomite member (of Detroit River series).	Michigan (S. E. part of lower peninsula), Ontario peninsula.	L. Devonian.
Flat top limestone.	W. Colorado.	Devonian or Mississippian (?).
Fleurant conglomerate.	Gaspé Peninsula, Quebec.	U. Devonian.
Flora limestone.	Central N. Iowa.	U. Devonian.
Floyd limestone.	Central N. Iowa.	U. Devonian.
Floydia zone.	Central N. Iowa.	U. Devonian.
Flume dolomite. Jefferson limestone (?).	Alberta (Jasper Park).	M. Devonian.
Fort Creek shales.	North of Norman, Lower Mackenzie River basin.	U. Devonian.
Four Mile Brook member (of Heppel formation).	W. Gaspé Peninsula, Quebec.	U. Devonian.
Fournier group.	New Brunswick.	Ordovician to Devonian.
Frame shale member. In Hamilton group.	Pennsylvania (Bedford Co.)	M. Devonian.
Franconia breccia.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Franklindale limestone lentil (of Chemung formation).	Central-N. Pennsylvania.	U. Devonian.
Frisco limestone.	Oklahoma (Arbuckle Mountains).	L. Devonian. (Oriskany)
Frog Mountain sandstone. As restricted by Butts. See Ragland sandstone and Clear Branch sandstone.	N. and Central Alabama and N. W. Georgia.	M. Devonian.

Fucoides caudagalli beds. Replaced by Esopus grit.	S. E. New York.	L. Devonian.
Gainesville sand. Oil drillers' name.	W. Kentucky.	M. Devonian.
Gander Run shale member. In Hamilton group.	Central Pennsylvania.	M. Devonian.
Gardeau shale member (of Portage formation).	W.-Central New York.	U. Devonian.
Gaspé limestones. Includes Grand Greve limestone, Cape Bon Ami limestone, and St. Alban limestone.	Gaspé Peninsula, Quebec.	M. and L. Devonian.
Gaspé sandstone.	Gaspé Peninsula, Quebec.	M. Devonian.
Gaspé series (of W. E. Logan). Includes Gaspé limestones, Gaspé sandstone, and Bonaventure formation.	Gaspé Peninsula, Quebec.	Devonian and Mississippian.
Genesee black shale member (of Jennings formation).	N. W. Maryland.	U. Devonian.
Genesee group includes: Standish sandstone. (Top.) West River shale and Genesee shale with Genundewa limestone lentil at top. Genesee was introduced to avoid using Genesee in two senses.	New York, Pennsylvania, Maryland, N. W. Virginia, and W. Virginia.	U. Devonian.
"Genesee shale" of early reports. Was used for New Albany shale.	Central and S. E. Indiana.	U. Devonian.
Genesee shale (of type region).	Central and W. Central New York.	U. Devonian.
Geneva limestone.	Central S. Indiana.	M. Devonian.
Genshaw formation.	N. E. Michigan.	M. Devonian.
Genundewa limestone member (of Genesee group).	W. New York.	U. Devonian.
Gerome formation of Stoyanow.	Central Arizona (type).	U. Devonian.
Ghost River formation.	Alberta (Front Range).	Devonian (?).
Giles formation. As originally defined.	S. E. West Virginia and S. W. Virginia.	L. Devonian and Silurian.
Giles formation (of Bassler).	S. W. Virginia.	L. Devonian.
Girard shale member (of Chemung formation).	N. W. Pennsylvania.	U. Devonian.
Glade sandstone. Replaced by Cobham conglomerate, 1934.	N. W. Pennsylvania.	Devonian or Carboniferous.
Glenerie limestone. In Oriskany Group.	S. E. New York.	L. Devonian.
Glenn Creek shale member (of Jefferson limestone).	N. W. Montana.	M. Devonian.

Globe limestone. Replaced by Tornado limestone (Pennsylvanian and Mississippian), and Martin limestone (U. and M. Devonian).	Arizona.	Devonian and Carboniferous:
Godiva limestone.	Central Utah.	Mississippian, Devonian, Silurian (?), and Ordovician.
Goodsprings dolomite.	S. E. Nevada.	M. Devonian.
Gordon sand. A subsurface formation below Pittsburgh coal.	W. Virginia and Pennsylvania (Green Co.).	U. Devonian or Carboniferous.
Gowanda shale.	W. New York.	U. Devonian.
Grainger shale. Considered of Mississippian age by E. O. Ulrich, C. Butts, and J. H. Swartz.	Tennessee.	U. Devonian (?)
Grand Grève limestones.	Gaspé Peninsula, Quebec.	L. Devonian.
Grand Lake limestone member (of Presque Isle series).	N. E. Michigan (Lower peninsula).	M. Devonian.
Grand Rapids sandstone.	N. W. Ohio.	Devonian (?)
Grand Tower limestone.	E. Missouri and S. W. Illinois.	M. Devonian.
Grand View dolomite.	S. Central Idaho.	U. Devonian.
Grants Mill granite.	Rhode Island.	Carboniferous or Devonian.
Grassy Creek shale.	N. E. Missouri, S.-E. Iowa, and W. Illinois.	Mississippian or U. Devonian.
Grassy Knob chert.	S. W. Illinois.	L. Devonian.
Gravel Point Stage.	N. W. Michigan (lower peninsula).	M. Devonian.
Grayback formation.	N. W. California.	Devonian.
Great Bend limestone. In Chemung formation.	N. E. Pennsylvania.	U. Devonian.
Green Pond Mountain group.	N. New Jersey, through Orange Co., New York, to Hudson River.	U., L., and M. Devonian and Silurian.
Griffon Cove River beds. ⁶ Correlated with Keyser member of Helderberg.	Gaspé Peninsula, Quebec.	L. Devonian.
Grimes sandstone member (of Portage group).	W. and W. Central New York.	U. Devonian.
Groton granite.	N. E. Vermont.	Devonian.
Guilmette formation.	W. Utah.	M. Devonian.
"Gypidula and Atrypa beds" of Cedar Valley limestone.	N.-E. Iowa.	M. Devonian.
"Gyroceras beds." (In Upper Davenport beds.)	Central E. Iowa.	M. Devonian.

⁶ E. M. Kindle (1938), Bull. Am. Pal., vol. 24, p. 17-18.

Hackberry group. As originally defined by Webster.	Central N. Iowa.	U. Devonian.
Hackberry shale.	N. Central Iowa.	U. Devonian.
Hackberry stage of Fenton and Belanski.	Central-N. Iowa.	U. Devonian.
Hades quartzite.	N. W. and Central W. Colorado and Utah.	U. Devonian.
Hamilton formation (where indivisible). Hamilton group of Cooper includes Marcellus shale, Skaneateles formation, Ludlowville formation, and Moscow formation. Earlier students have excluded Marcellus.	New York, Pennsylvania, N. E. Tennessee (?), and Ontario.	M. Devonian.
Hamilton period. A time term used by J. D. Dana to include deposition of Marcellus, Hamilton, and Genesee.		
Hamilton shale member (of Romney shale).	Central W., N. W., and S. W. Virginia; S. E., N. E. and N. half of West Virginia.	M. Devonian.
Hampshire formation. Includes latest Devonian.	Maryland, E. West Virginia, Central W. Virginia.	U. Devonian.
Hancock limestone.	S. W. Virginia and N. E. Tennessee.	L. Devonian and Silurian.
Hanover shale. A member of Portage formation replacing Silver Creek—preoccupied.	W. New York.	U. Devonian.
Haragan shale.	S. Central Oklahoma.	L. Devonian.
Hardin sandstone member (of Chattanooga shale).	W. Tennessee.	Mississippian or U. Devonian.
Hare Indian River shales.	N. of Ramparts of Mackenzie River.	M. Devonian.
Harpeth and Tennessee River group. Includes Pegram, Camden, Harriman, Quall, and Linden formations (Devonian), and Clifton formation (Silurian).	W. Tennessee.	M. and L. Devonian and Silurian.
Harrell shale (of Portage group).	Central Pennsylvania.	U. Devonian.
Harriman chert.	W. Tennessee.	L. Devonian.
Harrogate formation.	British Columbia.	M. Devonian.
Hatch shale and flags. In Portage formation.	W. Central New York.	U. Devonian.
Hatch shale member (of Portage formation).	W. New York.	U. Devonian.
Hauns Bridge group.	Central Pennsylvania.	U. Devonian.
Hay River beds.	Hay River, Mackenzie River District.	U. Devonian.

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| Hay River limestone. Above Hay River shale. | Great Slave Lake Area, Mackenzie River basin. | U. Devonian. |
| Hay River shale. Below Hay River limestone. | Great Slave Lake Area, Mackenzie River basin. | U. Devonian. |
| Hayfield limestone. Replaced by Little's Corner limestone member. K. E. Caster (1934). | N. W. Pennsylvania. | U. Devonian or Carboniferous. |
| Hayfield Monothem. K. E. Caster (1934). | N. W. Pennsylvania. | Mississippian or U. Devonian. |
| Hayfield shale. Later name for Conewango shale. | N. W. Pennsylvania. | Mississippian or U. Devonian. |
| Haymaker beds. | W. New York. | U. Devonian. |
| Haystack rhyolite. | N. W. Maine. | Devonian (?). |
| Healing Springs sandstone member. New Scotland limestone of Helderberg group. | Central W. Virginia. | L. Devonian. |
| Helderberg limestone and Helderberg group of Jas. Hall (1851). First term is used where sediments are not subdivided. | N. W. Maryland, New York, and S. W., Central, Central-S., and N. E. Pennsylvania. | L. Devonian. |
| Helderberg group of early New York reports includes: Becraft limestone, New Scotland limestone, and Kalkberg limestone, Coeymans of New York, and Stormville sandstone of New Jersey. | S. E. New York and N. New Jersey. | L. Devonian. |
| Helderberg group west of New York includes: Detroit River dolomite, Sylvania sandstone, Lucas dolomite member, Amherstberg dolomite member, Anderdon limestone member, Lucas limestone as originally defined, "Upper Monroe" of reports, "Monroe group" of early reports (in part), Holland sandstone, Monclova sandstone, and Grand Rapids sandstone. | N. W. Ohio and S. E. Michigan. | L. Devonian. |
| "Lower Helderberg or Waterlime group" of early reports. | Central Ohio. | L. Devonian and Silurian. |
| Helderberg group: | Central W. Virginia. | L. Devonian. |
| 1. Becraft limestone. | | |
| 2. New Scotland limestone. | | |
| 3. Coeymans limestone. | | |
| 4. Keyser limestone. | | |

5. Upper limestone member.
 6. Big Mountain shale member.
 7. Lower limestone member.
 8. Clifton Forge sandstone member.
 9. Longdale limestone.
 10. Craigsville limestone.
 11. Healing Springs sandstone member.
No. 9 is correlated with No. 1 and No. 10 with No. 2.
- Helderberg group: N. E. West Virginia. L. Devonian.
- Becraft limestone.
 - New Scotland limestone.
 - Coeymans limestone.
 - Keyser limestone.
 - Big Mountain shale member (of Keyser limestone).
 - Manlius formation of reports.
- Helderbergian is a time term corresponding to the Helderberg sediments interval.
- Hendricks sandstone. Chemung formation. N. half of N. E. West Virginia. U. Devonian.
- Heppel sandstone. Western equivalent of Gaspé sandstone in Eastern Gaspé. W. part of Gaspé Peninsula, Quebec. M. and U. Devonian.
- "High Point firestone." Is member of Portage formation below High Point sandstone.
- High Point sandstone member (of Portage formation). W. Central New York. U. Devonian.
- Hilton member (of Portage formation). Part of Chattanooga shale of early reports. S. W. Virginia and N. E. Tennessee. Type locality, Scott Co., Virginia. U. Devonian.
- Hinsdale sandstone. S. W. New York and N. W. Pennsylvania. U. Devonian.
- Holland sandstone. N. W. Ohio. L. Devonian.
- Honesdale sandstone group. (Catskill formation.) N. E. Pennsylvania. L. Devonian.
- Horn River shale. Providence-Simpson area, Mackenzie River basin. M. Devonian.
- Horton slates. Nova Scotia. Devonian or Carboniferous.
- Hosmer conglomerate. (Hosmer Run conglomerate.) N. W. Pennsylvania. Mississippian or U. Devonian.
- Huntersville chert. S. E. West Virginia. L. Devonian.

Hunton limestone.	S. E. Oklahoma.	Silurian and Devonian.
Huron group of Winchell.	Lower peninsula of Michigan (S. E. part).	U. Devonian and Mississippian.
Huron shale (of Newberry, 1870). <i>See</i> Kindle (1912) and Cushing (1931).	N. Ohio.	U. Devonian.
Huron shale of some early reports.	N. E. Ohio.	U. and M. Devonian.
Huron shale of Sheffield and Birmingham, Erie Co., Ohio. Is equivalent of the Genesee slates and Portage group of New York, according to R. P. Whitfield.	Ohio (Erie Co.).	U. Devonian.
Huron shale.	Ontario Peninsula.	U. Devonian.
Idiostrema beds of the Cedar Valley limestone.	N. E. Iowa.	U. or M. Devonian.
Inch Arran latites.	New Brunswick.	Devonian.
Independence shale member (of Wapsipinicon limestone).	N. E. and Central Eastern Iowa.	M. Devonian.
"Intermediate beds" of Cedar Valley limestone.	N. E. Iowa.	U. and M. Devonian.
"Intermediate limestone" (of R. G. McConnell, 1887). Replaced by Minnewanka formation of H. W. Shimer, 1926.	Alberta.	M. and L. (?) Devonian.
Ipperwash limestone.	Ontario.	M. Devonian.
Irasburg granite.	N. E. Vermont.	Devonian.
Ironside dolomite member (of Sultan limestone).	S. E. Nevada.	Devonian.
Ironstone quartz diorite.	Massachusetts and Connecticut.	Devonian (?).
Irvine sand. A subsurface sand.	E. Kentucky.	M. Devonian.
Irvineton parva-facies.	N. W. Pennsylvania.	U. Devonian.
Ischua sandstone.	W. New York.	U. Devonian.
Island Hill formation. (Oriskany series.)	N. E. Mississippi.	L. Devonian.
Island Mesa beds	N. Central Arizona.	U. Devonian.
Ithaca facies sub-group. Includes four members.	Central S. New York (Ithaca region).	U. Devonian.
Ithaca shale member (of Portage formation).	Central and E. Central New York.	U. Devonian.
Ivy Point member (of Ludlowville shale).	Central New York.	M. Devonian.
James River shale. (Chattanooga shale.)	S. W. Missouri.	Mississippian or U. Devonian.
Jamestown conglomerate. (Top member of Chemung	W. New York.	U. Devonian.

group at Jamestown.) G. D. Harris, 1891.		
Jefferson limestone.	Yellowstone Park, Utah, Montana, Wyoming, and British Columbia.	L. (?), M. and U. Devonian.
Jeffersonville limestone.	Indiana and N.-Central Kentucky.	M. Devonian.
Jemison chert.	E. Alabama.	L. Devonian.
Jennings formation.	Maryland, Central-Western and N. W. Virginia and West Virginia.	U. Devonian.
Joes Rock granite.	S. E. Massachusetts.	Devonian (?)
Juniper Hill formation (of A. O. Thomas, 1925). Replaces Sheffield formation of C. L. Fenton, 1919.	Central N. Iowa.	U. Devonian.
Kaaterskill formation. Replaces Chadwick's restricted Catskill.	New York.	U. Devonian.
Kalkberg limestone member (of Helderberg group).	E.-Central, S. E. New York.	L. Devonian.
Kanouse sandstone. (Onondaga fossils.)	S. E. New York and New Jersey.	M. Devonian.
Kashong member. In Moscow shale.	Central New York.	M. Devonian.
Katsberg red beds.	E. New York (Catskills).	U. Devonian.
Kattel shale.	S. E. New York (Otsego Co.).	U. Devonian.
Keene limestone.	W. Central Montana.	M. Devonian and Cambrian.
Kenneth limestone. Compared with Keyser limestone by Cumings and Shrock (1928).	Indiana (Cass Co.).	Possibly early Devonian.
Kennett formation. Correlated with Calceola beds of Devonshire and the Eifel District. Included in Sacramento formation by J. P. Smith (1894).	California.	M. Devonian.
Kenwood beds (of Wapsipinicon limestone).	Central-E. Iowa.	M. Devonian.
Kettle Point shales. ⁷	Lake Huron, Ontario.	U. Devonian.
Keyser limestone member (of Helderberg group).	Central Pennsylvania, N. W. Maryland, N. W. and Central W. Virginia, Central, S. E., and N. E. West Virginia.	L. Devonian.
Keyuka flagstone.	W. Central New York.	U. Devonian.

⁷ Logan, W. E. (1863), *Geology of Canada*, Rept. Prog., p. 387.

Kiddville limestone.	Central N. Kentucky.	M. Devonian.
Killbuck conglomerate lentil. (Cattaraugus formation.)	S. W. New York.	Mississippian or U. Devonian.
Killians limestone.	N. E. Michigan.	M. Devonian.
Kiln formation. Fauna related to Naples, New York, and Three Forks shale of Mon- tana.	E. Jasper Park, Alberta.	U. Devonian.
Kimberling shale. Type local- ity, Bland Co., Virginia.	S. W. Virginia and W. Vir- ginia.	U. Devonian.
Kimman granodiorite.	N. W. New Hampshire	U. Devonian.
Kineo rhyolite.	W. Maine.	Devonian.
King Ferry shale member (of Ludlowville shale).	Central New York.	M. Devonian.
Kings limestone.	Missouri.	Devonian.
Kingsley red shale member (of New Milford formation).	N. E. Pennsylvania.	U. Devonian.
Kings Mill shales and Kings Mill sandstone.	Central Pennsylvania.	U. Devonian.
Kingston beds (preoccupied) replaced by Port Ewen lime- stone. (Oriskany group.)	E. New York and N. half of New Jersey.	L. Devonian.
Kiskatom formation.	S. E. New York.	M. Devonian.
Klondike member. Columbus limestone.	Central Ohio (Delaware Co.).	M. Devonian.
Knapp formation. Knapp formational suite. Knapp monothem. (Lim- ited below to include the chocolate-colored area.)	N. W. Pennsylvania and S. W. New York.	Mississippian or U. Devonian.
Knobsville continental beds.	Pennsylvania (Fulton Co.).	M. Devonian.
Knoydart formation. (Con- tinental sediments.)	Nova Scotia.	L. Devonian.
Kugitritin formation.	Alaska (Seward Peninsula).	Devonian (?).
Kugruk group.	Alaska (Seward Peninsula).	Silurian, Ordovi- cian, and Devo- nian (?).
Kushequa shale member.	N. W. Pennsylvania.	Devonian or Car- boniferous.
Lackawaxen conglomerate. (Catskill formation.)	N. E. Pennsylvania.	U. Devonian.
Lake Church formation.	S. E. Wisconsin.	M. Devonian.
Lake quartz syenite.	New Hampshire.	Devonian or Car- boniferous.
Lambton formation. ⁸	Canada.	Devonian.
Lamoureaux shale.	Nevada (Eureka District).	Devonian.
Lancaster formation.	New Brunswick.	Devonian or Car- boniferous.

⁸ Chapman, E. J. (1864), *A popular and practical exposition of the minerals and geology of Canada*, p. 165.

Landaff granite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Landes limestone.	N. E. West Virginia.	M. Devonian.
Lanesboro member (of New Milford formation).	N. E. Pennsylvania.	U. Devonian.
Laona sandstone member (of Chemung formation).	W. New York.	U. Devonian.
Laurens member (of Tully limestone with <i>Hypothyri-</i> <i>dina</i> and a modified Ithaca fauna).	E. New York.	U. Devonian.
Le Boeuf sandstone. (Con- glomerate.)	N. W. Pennsylvania.	U. Devonian.
Leadville limestone. Re- stricted to Mississippian and Chaffee formation introduced for Devonian portion by E. Kirk (1931).	Colorado.	Mississippian.
Ledyard member. (Hamilton.)	Central and W. New York.	M. Devonian.
Lepidocentrus zone (of Mason City substage).	Central N. Iowa.	U. Devonian.
Letchworth shale.	W. New York.	U. Devonian.
Levanna shale. (Hamilton.)	Central and W. New York.	M. Devonian.
Levis shale.	Quebec.	Devonian.
Lewis Run sandstone member (of Northern Venango for- mation).	Central Pennsylvania.	U. Devonian.
Lewiston chert lentil.	N. E. West Virginia.	L. Devonian.
Lewistown limestone.	Central Pennsylvania.	L. Devonian and Silurian.
Lewistown limestone shale (of J. P. Leslie).	Central Pennsylvania.	L. Devonian.
Lime Creek shale.	Central N. Iowa.	U. Devonian.
Lime Creek stage of Thomas, 1913.	Central N. Iowa.	U. Devonian.
Linden group.	W. Tennessee.	L. Devonian (Helderberg).
Lindwurm member.	S. E. Wisconsin.	M. Devonian.
Lingle limestone.	S. W. Illinois and E. Mis- souri.	M. Devonian.
Linwood member (of Cedar Valley limestone).	E. Iowa.	U. Devonian.
Lithographic and stromato- poroid beds of Cedar Valley limestone.	Central E. and N. E. Iowa.	U. and M. De- vonian.
Little Genesee conglomerate.	S. W. New York.	U. Devonian.
Little River group. Originally considered Devonian or Si- lurian by G. F. Mathew (1863). Now recognized as Carboniferous.	New Brunswick.	Carboniferous.

Little Saline limestone.	Central E. Missouri (St. Genevieve Co.).	L. Devonian.
Little Traverse Bay limestone.	Michigan (N. W. part Lower Peninsula).	M. Devonian.
Little Traverse group. <i>See</i> Traverse formation.		
Little Corner limestone member.	N. W. Pennsylvania (Crawford Co.).	Devonian or Carboniferous.
Littleton formation.	N. W. New Hampshire.	L. Devonian (Oriskany).
Littleton member (of Cedar Valley limestone).	E. Iowa.	U. Devonian.
Lone Butte limestone member.	N. W. Montana.	M. Devonian.
Long Beards Riffs sandstone member (of Chemung formation).	W. New York.	U. Devonian.
Long Lake beds. (Top member of Presque Isle series.)	N. E. Michigan.	M. Devonian.
Long Lake series of Grabau. Restricted by W. A. Ver Wiebe (1927) and redefined by Warthin, Jr., and Cooper (1935).	Michigan (Lower Peninsula, N. E. part).	M. Devonian.
Long Rapids shale.	N. Ontario (Moose River basin).	U. Devonian.
Longdale limestone. (Helderberg group.)	Central W. Virginia.	L. Devonian.
Losh Run shale.	Pennsylvania (Perry Co.).	U. Devonian.
Louisiana limestone.	Missouri.	Devonian.
"Louisville - Delphi black slate." Replaced by New Albany shale.	W. Central Kentucky, Central Indiana.	U. Devonian.
Lower (Allegrippis) conglomerate.	N. E. West Virginia.	U. Devonian.
Lower Devonian series. Includes Oriskany and Helderberg groups and equivalents.		
Lucas dolomite member (of Detroit River series).	N. W. Ohio. Ontario Peninsula, and Michigan (Lower Peninsula, S. E. part).	L. Devonian.
Lucas limestone.	Central E. Iowa.	M. Devonian.
Ludlow conglomerate member. K. E. Caster (1934) replaced this preoccupied name with Wetmore conglomerate.	N. W. Pennsylvania.	Devonian or Carboniferous.
Ludlowville shale member (of Hamilton group).	W. and Central New York.	M. Devonian.
Luthers Mills coquinite. Includes Sherwood's Burlington limestone.	Pennsylvania (Bradford Co.).	U. Devonian.

Lynn volcanic complex.	N. E. Massachusetts.	Devonian or Mississippian.
Machias shale. Top member Chemung formation.	W. New York.	U. Devonian.
McKean group.	Pennsylvania.	Devonian.
Mackenzie River formations.		
Beavertail limestone.	} Middle and Lower Mackenzie River.	M. Devonian.
Carcajou Mountain beds. (Oil producing formation.)		U. Devonian.
Fort Creek shales.	} Great Slave Lake District.	U. Devonian.
Hare Indian River shale.		M. Devonian.
Hay River beds.		U. Devonian.
Horn River shales.		M. Devonian.
Pine Point limestone.		M. Devonian.
Presquile dolomite.		M. Devonian.
Ramparts limestone.	Middle and Lower Mackenzie River.	M. Devonian.
Simpson shale.	Great Slave Lake District.	U. Devonian.
Slave Point limestone.	Great Slave Lake District.	U. Devonian.
Mackinac limestone.	Michigan (Upper Peninsula, E. and N. part, and Lower Peninsula, N. E. part).	M. Devonian.
Magnesian beds. Upper of the Cedar Valley limestone.	N. E. Iowa.	U. and M. Devonian.
Mahanoy black shale member (of Marcellus formation).	Central Pennsylvania.	M. Devonian.
Mahantango formation. Represents Hamilton as generally used—beds between Marcellus and Portage.	Central Pennsylvania (Alleghany Front).	M. Devonian.
Malbaie conglomerate.	Gaspé Peninsula, Quebec.	M. (?) Devonian.
Manitoban formation.	Manitoba.	M. Devonian.
Manlius. The fauna appears to bridge the Silurian and Devonian systems.	New York.	Lowest Devonian (?) and latest Silurian.
Mansfield red beds. In Chemung formation.	N. Central and N. E. Pennsylvania.	U. Devonian.
Maple Green andesite.	New Brunswick.	Devonian.
Mapleton granite.	N. E. Maine.	Devonian.
Mapleton sandstone.	N. E. Maine.	Devonian.
Marathon sandstone member of Ithaca facies subgroup.	S. Central New York.	U. Devonian.
Marble Bay formation.	British Columbia.	Devono-Carboniferous.
Marble Cliff limestone. In Columbus limestone.	Central Ohio.	M. Devonian.
Marblehead limestone. In Columbus limestone.	N. E. and Central Ohio.	M. Devonian.
Marcellus shale. Considered	New York, New Jersey,	M. Devonian.

part of Hamilton group in New York.	Pennsylvania, W. Maryland, Central S. and N. E. West Virginia, and Ohio.	
Martin limestone.	S. E. Arizona (Bisbee and Gleeve regions).	M. and U. Devonian.
Marvin Creek limestone.	Pennsylvania (McKean Co.).	U. Devonian or Carboniferous.
Mascarene series.	New Brunswick.	Devonian and Silurian (?).
Mason City limestone.	Central N. Iowa, Central E. Iowa.	U. Devonian.
Mason City limestone or dolomite.	Central N. Iowa.	U. Devonian.
Mason City substage of C. H. Belanski. Includes Lepidocentrus zone, Trigonotreta zone, and Aulopora zone.	Central N. Iowa.	U. Devonian.
Mattapan volcanic complex.	Rhode Island.	Carboniferous or Devonian.
May Creek formation.	S. W. Oregon.	Devonian (?).
Meade Co. Gas sand. Oil drillers' name.	W. Kentucky.	U. Devonian.
Menifee gas sand.	E. Kentucky.	M. Devonian.
Menteth limestone lentil (of Moscow shale).	W.-Central New York.	M. Devonian.
Meredith granite.	E. New Hampshire.	Late Devonian (?).
Messines formation.	British Columbia.	Devonian.
Mexico sandstone member	Central Pennsylvania.	M. Devonian.
Middle Devonian series. By general usage, it includes Schoharie grit, Onondaga limestone, Hamilton group, and their equivalents.		
Middlesex shale member (of Portage formation).	W. and W.-Central New York.	U. Devonian.
Milesburg formation.	Central Pennsylvania.	L. Devonian.
Milford granite.	Rhode Island and E. Massachusetts.	Devonian (?).
Miller's Cliff conglomerate.	N. W. Pennsylvania (Warren Co.).	Mississippian or U. Devonian.
Miller's sandstone member (of Cattaraugus formation).	N. W. Pennsylvania (Erie Co.).	U. Devonian or Carboniferous.
Milligen formation.	S. Central Idaho.	Carboniferous and Devonian (?).
Milwaukee formation. Of Hamilton and Marcellus age.	S. E. Wisconsin.	M. Devonian.
Mineola limestone.	N. E. and Central Missouri.	M. Devonian.
Minnewanka formation. Equivalent of Banff lime-	Alberta.	U. Devonian, M. Devonian, and

stone and dolomite. (E. M. Kindle, 1924.)		possibly Silurian.
Misenheimer shale.	S. W. Illinois.	M. Devonian.
Mispeck group. (Mathew, 1863.)	New Brunswick.	Devonian.
Missouri Mountain formation. Divided by A. H. Purdue (1909) into Arkansas novaculite and Fork Mountain slate (the latter, Pennsylvanian).	S. W. Arkansas.	Devonian and Pennsylvanian.
Moheganter shale and sandstone. In Hamilton group.	E. New York.	M. Devonian.
Monarch formation.	Central and N. Montana.	U. and M. Devonian.
Monclova sandstone.	N. W. Ohio.	L. Devonian.
Monroe group. Of early reports. Detroit River series later proposed for Upper Monroe of Low. Devonian age.	N. W. Ohio and S. E. Michigan.	L. Devonian and Silurian.
Monroe shales.	N. New Jersey and S. E. New York.	M. Devonian.
Montague group.	Yukon Territory.	Devono-Carboniferous.
Montebello sandstone. Included in Hamilton.	Pennsylvania.	M. Devonian.
Montebello sandstone. In Hamilton formation. Overlain by 2 feet of Montebello fossil iron ore.	Central Pennsylvania, (Perry Co.)	M. Devonian.
Monterey sandstone. Replaced by Ridgeley sandstone.	N. W. Virginia and W. Maryland.	L. Devonian.
Montpelier sandstone.	S. E. Iowa.	U. or M. Devonian.
Montrose red shale. Catskill formation.	N. E. Pennsylvania.	U. Devonian.
Montrose sandstone.	S. Central New York and N. E. Pennsylvania.	U. Devonian.
Moody Ledge granite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Moose Island series.	Maine.	Devonian.
Moose River sandstone.	W. Maine.	L. Devonian.
Morenci shale. Includes as a lower member a limestone.	S. E. Arizona (Clifton region).	U. Devonian.
Morse Creek limestone. Same as the Encrinal and Tichenor limestone and lies below Ludlowville (A. W. Grabau, 1917).	W. New York.	M. Devonian.
Moscow shale member (of Hamilton formation).	Central and W. New York.	M. Devonian.

Mottville member (of Skaneateles shale).	Central New York.	M. Devonian.
"Moulder sand." Oil drillers' name.	W. Kentucky.	M. Devonian.
Moulton diorite.	N. W. New Hampshire.	Late Devonian or Carboniferous.
Mount Forster formation.	British Columbia.	Devonian (?)
Mount Garfield porphyritic quartz syenite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Mount Herman sandstone.	S. W. New York.	Mississippian or U. Devonian.
Mount Joli formation.	Quebec (Percé, Gaspé Peninsula).	L. Devonian.
Mount Lafayette granite porphyry.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Mount Marion beds. Marine member of lower part of Hamilton formation.	S. E. New York.	M. Devonian.
Mount Moat conglomerate.	N. New Hampshire.	Devonian.
Mount Osceola granite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Mount Pleasant conglomerate.	N. E. Pennsylvania.	U. Devonian.
Mount Pleasant red shales. Catskill formation.	N. E. Pennsylvania.	U. Devonian.
Mount Wilson quartzite.	Alberta.	Devonian.
Mount Wissick group.	Quebec.	Devonian (?)
Mountain Glen shale.	S. W. Illinois.	U. Devonian.
Mowitza shale.	Utah.	Devonian.
Muddy Peaks limestone.	Nevada.	M. Devonian or older.
Murailles formation.	Quebec.	L. Devonian.
Nahant gabbro.	N. E. Massachusetts.	Devonian (?) and early Palaeozoic.
Naples beds. Lie between Portage sandstone above and Genesee beds below.	New York (Ontario Co.).	U. Devonian.
Naticopsis zone (of Hackberry group).	Central-N. Iowa.	U. Devonian.
Neponset conglomerate.	E. Massachusetts.	Carboniferous or Devonian.
Nevada limestone.	Nevada (Eureka region).	U. and M. Devonian.
Nevadan series. Applied to Nev. limestone by C. Keyes (1923).	Nevada.	Devonian.
New Albany shale.	Indiana and N. Central Kentucky.	U. Devonian.
New Chapel chert bed. In Silver Creek limestone.	Indiana (Clarke Co.).	M. Devonian.
New Hampshire magma series.	N. W. New Hampshire.	Late Devonian or Carboniferous.

New Lisbon member.	Central New York.	U. Devonian.
New Milford group. In Cats-kill formation.	N. E. Pennsylvania.	U. Devonian.
New Milford sandstone.		
" " middle sandstone and shales.		
New Milford lower sandstone.		
New Milford red shales.		
New Scotland limestone (of Helderberg group).	E. New York, N. New Jersey, Pennsylvania, Maryland, Virginia, and N. West Virginia.	L. Devonian.
Newark granite.	N. E. Vermont.	Devonian.
Newbury volcanic complex.	N. E. Massachusetts.	Devonian.
Newfoundland grit. Replaced by Kanouse sandstone in 1908.	S. E. New York, N. half of New Jersey.	M. Devonian. (Onondaga).
Newport sandy shales and sandstones.	Central S. Pennsylvania.	U. Devonian.
Newport limestone.	Central Pennsylvania.	U. Devonian.
Newport granite.	N. E. Vermont.	Devonian.
Nipisiguit granite.	New Brunswick.	Devonian (?).
Noel shale. (Equivalent of upper part of Chattanooga shale.)	S. W. Missouri.	Mississippian or U. Devonian.
Nora limestone.	Central N. Iowa.	U. Devonian.
Nora substage (of Belanski). Includes Second <i>Actinostroma</i> zone, <i>Platyrachella</i> zone, First <i>Actinostroma</i> zone.	Central N. Iowa.	U. Devonian.
North Point member (of Milwaukee formation).	S. E. Wisconsin.	M. Devonian.
North River bluestone. (A commercial term for a member of Portage formation.)	Central New York.	U. Devonian.
North Vernon limestone. (Sellersburg approximately.)	S. Indiana (Jennings Co.).	M. Devonian.
North Warren shale member.	N. W. Pennsylvania.	U. Devonian or Carboniferous.
Northeast shale (of Chemung formation).	N. W. Pennsylvania and W. New York.	U. Devonian.
Norway Point formation.	N. E. Michigan.	M. Devonian.
Nunda sandstone member (of Portage formation).	W. and Central New York.	U. Devonian.
Oatka Creek shale. In Marcellus shale.	Central and W. New York.	M. Devonian.
Ogden quartzite.	Utah and Nevada.	Devonian.
Ohio shale. As originally defined.	Ohio and N. Kentucky.	U. and M. Devonian.

Ohio shale. As generally limited.	Ohio, S. E. Michigan, Ontario peninsula, and N. Central Kentucky.	U. Devonian.
Ohio shale of Edward Orton. Includes Cleveland shale, Erie shale, and Huron shale of Newberry.	N. Ohio and Ontario.	U. Devonian and Mississippian (?).
Oil Creek Lake group. Overlies Riceville shale.	N. W. Pennsylvania.	U. Devonian and Mississippian.
Oil Lake group and Oil Lake series. These have been claimed to represent Mississippian by K. E. Caster and Upper Devonian by G. H. Chadwick.	N. W. Pennsylvania.	Mississippian and U. Devonian (?).
"Old Red sandstone" of early reports. Includes Catskill group, Montrose and Oneonta sandstone. No. 11, Pennsylvania Survey.	New York.	U. Devonian.
Olentangy shale. Overlies Delaware limestone and underlies black Huron shale.	Central Ohio and Ontario peninsula.	M. Devonian.
Olinger grey shale member. Part of Chattanooga shale, J. H. Swartz (1927).	S. W. Virginia and S. E. Tennessee.	Mississippian or U. Devonian.
Olive Hill formation. (Member of Linden group.)	W. Tennessee.	L. Devonian.
Oliverian magma series.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Olmsted shale member (of Cleveland).	N. E. Ohio.	Mississippian or U. Devonian.
Oneonta sandstone.	S. E. and New York.	U. Devonian.
Onondaga limestone. Includes calcareous sediments between Marcellus shale and Oriskany sandstone.	New York, Pennsylvania, W. Maryland, Virginia, N. West Virginia, Ohio, and Ontario Peninsula.	M. Devonian.
Onteora red beds.	S. E. New York (Green Co.).	U. Devonian.
Orange granite.	N. E. Vermont (Orange Co.).	Devonian.
Oriskany sandstone.	Ontario peninsula, New York, Pennsylvania, W. Maryland, Central Virginia, and E. West Virginia.	L. Devonian.
Oswayo formation.	S. W. New York and (?) N. Pennsylvania.	Mississippian or U. Devonian.
Otis limestone member (of Wapsipinicon limestone—second from base).	Central E. Iowa.	M. Devonian.
Otisco member. Basal member of Ludlowville formation.	Central New York.	M. Devonian.

Otsego member (of Marcellus shale).	E. New York.	M. Devonian.
Otselic shale and sandstone. Equivalent of lower Ithaca shale according to G. H. Chadwick.	Central New York.	U. Devonian.
Ouray limestone. Line between Devonian and Mississippian faunas has been drawn at type locality by E. M. Kindle (1909, U. S. Geol. Survey, Bull. 391, p. 10). E. Kirk (1931) uses Leadville limestone for Carboniferous part of Ouray limestone.	S. W. Colorado.	Early Mississippian and U. Devonian.
Owasco member.	Central New York.	M. Devonian.
Owen beds or substage. Included in upper part of Hackberry group of Webster (1889).	Central N. Iowa.	U. Devonian.
Owls Head granite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Ozaukee.	S. E. Wisconsin.	M. Devonian.
Panama conglomerate.	S. W. New York and N. W. Pennsylvania.	Mississippian or U. Devonian.
Panola formation.	Central N. Kentucky and S. E. Kentucky.	Devonian and Silurian.
Panther Mountain shale and sandstone.	E. New York.	M. Devonian.
Paracyclas zone of Rock Grove substage.	Central N. Iowa.	U. Devonian.
Parkhead sandstone member (of Jennings formation).	W. Maryland and N. W. West Virginia.	U. Devonian.
Parrish limestone lentil (of Cashaqua shale).	W.-Central New York.	U. Devonian.
Parryanus beds of the Cedar Valley limestone.	N. E. Iowa.	U. and M. Devonian.
Parting quartzite member (of Chaffee formation).	Colorado (Leadville District).	U. Devonian.
Partridge Point formation.	N. E. Michigan.	M. Devonian.
Paupack sandstone. In Catskill.	N. E. Pennsylvania.	U. Devonian.
Paupack shales. In Catskill formation.	N. E. Pennsylvania.	U. Devonian.
Peabody granite.	N. E. Massachusetts.	Devonian or Carboniferous.
Pecksport member (of Marcellus).	Central New York.	M. Devonian.

Pegram limestone. Discarded by E. R. Pohl (1930) in favor of Sellersburg limestone and Jeffersonville limestone.	W. Tennessee River.	M. Devonian.
Pendleton sandstone.	W. Central Indiana. In wells (?)—S. W. and N. W. Indiana.	M. Devonian.
Peninsula facies of the Gaspé sandstone. E. M. Kindle (1938). <i>See also</i> York River facies.	Gaspé Peninsula, Quebec.	M. Devonian.
Pentamerus limestone. Overlies Tentaculite limestone (Manlius limestone).	New York.	L. Devonian.
Penters chert.	Arkansas.	Devonian. (Probably lower.)
Pequanac shale. Discarded in favor of Cornwall shale.	Northern New Jersey.	M. Devonian.
Percé limestone.	Quebec.	L. Devonian.
"Percé massive." Same as Percé limestone.	Gaspé Peninsula, Quebec.	L. Devonian.
Percha shale.	S. New Mexico to S. W. Texas.	U. Devonian.
Perdrix shale. Same as Miette of E. M. Kindle (1929).	Jasper Park, Alberta. (Type Sec. on Roche Miette.)	M. or early U. Devonian.
Perkins group.	British Columbia.	Devonian (?).
Perry formation. Hitchcock (1860).	New Brunswick and S. E. Maine.	U. Devonian.
Perry limestone. Keyes (1896).	S. E. Missouri.	M. and L. Devonian and Silurian.
Perry sandstone. Lesley (1892).	Central Pennsylvania (Perry Co.).	M. Devonian.
Peru limestone. Leslie (1878).	Central Pennsylvania, (Juniata Co.).	M. Devonian.
Peru sandstone. Leslie (1878).	Central Pennsylvania, (Juniata Co.).	M. or L. Devonian.
Petoskey limestone. Top division of Traverse group.	Michigan (Lower Peninsula, N. W. part).	M. Devonian.
Petrolia shale.	S. W. Ontario.	M. Devonian.
Petrolia first sandstone. In Pocono formation. Drillers' term.	Pennsylvania (Butler Co.).	U. Devonian (?).
Phelps sandstone.	S. W. Missouri.	Mississippian or U. Devonian.
Pic d'Aurore series.	Quebec.	L. Devonian.
Picacho de Calera formation.	S. E. Arizona.	Devonian.
Pimple Hill conglomerate.	N. E. Pennsylvania.	U. Devonian or Carboniferous.
Pine Point limestone.	Great Slave Lake area.	M. Devonian.

Pine Top chert.	S. E. Oklahoma.	M. Devonian.
Pinean series.	Nevada (Eureka District).	Devonian.
Piney Ridge sandstone member (of Chemung formation).	Central Pennsylvania.	U. Devonian.
Pinyon Peak limestone.	Utah (Central Northern).	U. (?) Devonian.
Pipe Creek shale member (of Wiscoy sandstone).	W. New York.	U. Devonian.
Pipestone formation.	British Columbia.	Devonian.
Platyrachella zone of Nora sub- stage.	Central-N. Iowa.	U. Devonian.
Plum Creek shale. Olentangy shale of reports.	N. E. Ohio.	M. Devonian.
Pomfret granite.	S. E. Vermont.	Devonian.
Pompey member. In Skane- ateles shale.	E. Central New York.	M. Devonian.
Pond granite.	New Hampshire.	U. Devonian or Carboniferous.
Ponent series. Synonym for Catskill and may include Cattaraugus, Oswayo, and Knapp formations.	Appalachian region.	U. Devonian and Carboniferous.
Pope Hollow conglomerate.	S. W. New York and N. W. Pennsylvania.	Devonian or Car- boniferous.
Port Ewen limestone. (Re- places Kingston beds, pre- occupied.)	S. E. New York.	L. Devonian.
Port Jervis limestone.	S. E. New York.	L. Devonian.
Port Lambton beds.	Ontario.	U. Devonian.
Portage group. Includes sedi- ments between Genesee shale at base and Chemung above.	New York, Pennsylvania, Maryland, Virginia, and West Virginia.	U. Devonian.
Portage sandstone. Sand- stones at Portage, New York, at top of Portage group.	W. New York.	U. Devonian.
Portland Point member. In Moscow shale.	Central and E. Central New York.	M. Devonian.
Portland shale.	W. New York.	U. Devonian.
Portville conglomerate. "Is synonym of Wolf Creek." (K. E. Caster.)	S. W. New York.	U. Devonian or Carboniferous.
Postmedial series. Includes Marcellus to Chemung. Term abandoned as a non- geographic name.	New York and W. Appa- lachian region.	M. and U. Devo- nian.
Potlatch anhydrite formation.	Central N. Montana.	U. or M. Devo- nian.
Potter Farm formation.	N. E. Michigan.	M. Devonian.
Potter parvafacies.	N. Pennsylvania.	Devonian or Car- boniferous.
Prattsburg sandstone and shale.	W.-Central New York.	U. Devonian.
Presque Isle series.	N. E. Michigan (lower pen- insula).	M. Devonian.

Presqu'île dolomite. Contains the <i>Stringocephalus burtini</i> fauna.	Great Slave Lake, N. W. Territories.	M. Devonian.
Priest Hill granite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Prout limestone.	N. Ohio.	M. Devonian.
Prout series. Includes sediments of early Hamilton age older than Olentangy shale.	N. W. Ohio.	M. Devonian.
Pyburn limestone member (of Olive Hill formation).	W. Tennessee.	L. Devonian. (Helderbergian.)
Quall limestone.	W. Tennessee.	L. Devonian. (Oriskany.)
Ragland sandstone. Introduced by C. Butts (1927) for Hamilton part of Frog Mountain sandstone.	E. Alabama.	M. Devonian.
Ragland sand. Drillers' name for a sand above Ohio shale.	E. Kentucky.	Mississippian or U. Devonian.
Rampart series (of J. E. Spurr, 1898).	Yukon River, Alaska.	Devonian and Mississippian rocks.
Rampart group. J. B. Mertie (1936) restricted Spurr's Rampart series to post-Devonian rocks.	Yukon (Tanana region).	Mississippian.
Ramparts limestone. Characterized by the <i>Stringocephalus burtini</i> fauna.	Ramparts of Mackenzie River.	M. Devonian.
Rangeley conglomerate.	Maine (Franklin Co.).	Devonian (?).
Rapid limestone.	Central E. Iowa.	U. Devonian.
Raymond Quarry beds. Represent middle part of Cedar Valley limestone.	Central E. Iowa.	U. or M. Devonian.
Red Mountain group.	N. Alabama.	Devonian to Cambrian.
Red Warrior limestone.	S. W. Utah.	Devonian (?) and Silurian (?).
Remick tonalite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Renwick shale member.	Central New York (Ithaca region).	U. Devonian.
Rhinestreet shale member (of Portage formation).	W. and W. Central New York.	U. Devonian.
Riceville shale member (of Chemung formation).	N. W. Pennsylvania.	U. Devonian.
"Richburg sand" oil horizon. Probably Upper Portage.	S. W. New York.	U. Devonian.
Ridgeley sandstone. In Oriskany group.	Central Pennsylvania to West Virginia and Virginia.	L. Devonian.

Ridgway shale member.	N. W. Pennsylvania.	U. Devonian or Carboniferous.
Roche Miette limestone. (Dowling, 1912). Includes "Intermediate limestone" and the Flume dolomite of Raymond (1930).	Jasper Park, Alberta.	M. and U. Devonian.
Rochester Biotite granite.	S. E. New Hampshire.	Devonian (?).
Rock Grove substage. (Includes Schizophoria zone above and Paracyclas zone below.)	Central-N. Iowa.	U. Devonian.
Rockford shale.	Central-N. Iowa.	U. Devonian.
Rockhouse shale. Basal member of Helderberg or Linden group.	W. Tennessee.	L. Devonian.
Rockport limestone.	N. E. Michigan.	M. Devonian.
Rockville sandstone.	S. W. New York.	U. Devonian.
Rockville member (of Skaneateles formation).	Pennsylvania (Dauphin Co.).	M. Devonian.
Rocky Gap sandstone.	S. W. Virginia.	L. Devonian. (Helderberg group).
Rocky Run conglomerate. Chemung formation and part of Catskill formation.	N. E. Pennsylvania.	U. Devonian.
Romney shale.	Central and N. Virginia, E. West Virginia, W. Maryland, and S. Pennsylvania.	M. Devonian.
Ross limestone member (of Olive Hill formation).	Tennessee River Valley.	L. Devonian.
Roulette conglomerate. (Chemung conglomerate of Sherwood.)	Central Pennsylvania (Potter Co.).	U. Devonian.
Rower vent-agglomerate.	New Hampshire.	Devonian or Carboniferous.
Rowlesburg sandstone. In Chemung formation.	West Virginia.	U. Devonian.
Roxbury conglomerate.	E. Massachusetts.	Devonian or Carboniferous.
Roystone coquinite member.	N. W. Pennsylvania.	Devonian or Carboniferous.
Rush member (of Tully limestone, B. Willard, 1934). Contains <i>Hypothyridina venustula</i> .	Central Pennsylvania (Northumberland Co.).	U. Devonian.
Rush formation. (B. Willard 1935.) Supersedes Rush member as lowest formation of Portage group and includes underlying Tully member.	Central Pennsylvania.	U. Devonian.

Rushford sandstones.	W. New York.	U. Devonian.
Ryegate granite.	N. E. Vermont.	Devonian.
Sacramento formation. (Kennett limestone and shale.)	N. California.	M. Devonian.
Saegerstown shale.	N. W. Pennsylvania (Erie Co.).	U. Devonian or Carboniferous.
Sagamore sandstone lentil (of Bedford shale).	N. E. Ohio.	Mississippian or U. Devonian.
Saginaw sand. Oil sand. Near top of Traverse formation.	E. Michigan.	M. Devonian.
St. Alban beds.	Gaspé Peninsula, Quebec.	L. Devonian.
St. Clair shale.	Michigan (lower peninsula, S. E. part).	U. Devonian.
St. Johns plant beds or "fern ledges." (Formerly referred to the Devonian.)	St. Johns, New Brunswick.	Carboniferous.
St. Laurent limestone.	E. Missouri.	M. Devonian.
Salamanca conglomerate member (of Cattaraugus formation or Conewango formation where Cattaraugus and Oswayo cannot be separated.)	W. New York and N. W. Pennsylvania.	Mississippian or U. Devonian.
Salamanca formational suite. Includes three members.	S. W. New York and N. W. Pennsylvania.	Devonian or Carboniferous.
Sallisaw sandstone.	E. Oklahoma.	M. Devonian.
Salmontrout limestone.	Porcupine River, N. E. Alaska.	M. Devonian.
Saltville chert.	S. W. Virginia.	L. Devonian.
Sandusky limestone.	N. and Central Ohio.	M. Devonian.
Santa Rita limestone.	S. E. Arizona.	M. (?) Devonian.
Santiago chert.	S. W. Texas.	Devonian (?).
Saragossa quartzite.	S. E. California.	Probably Devonian or Silurian.
Saverton shale. Treated as Kinderhook by U. S. Geol. Survey.	N. E. Missouri, W. Illinois, and S. E. Iowa.	Mississippian or U. Devonian.
Sawback formation. Originally described as a Devonian formation; shown by E. M. Kindle (1924) to be Cambrian.	Alberta.	U. Cambrian or Beekmantown.
Sawyer quartz syenite.	New Hampshire.	Devonian or Carboniferous.
Saxton conglomerate member (of Chemung formation). Called Lackawaxen conglomerate in I. C. White's report on this area.	Central Pennsylvania.	U. Devonian.
Saxton shale. Montrose red shale.	Central Pennsylvania.	U. Devonian.

Saxton shale. In Catskill formation.	S. Central Pennsylvania (Bedford Co.), and E. West Virginia.	U. Devonian.
Schizophora zone of the Rock Grove substage.	Central-N. Iowa.	U. Devonian.
Schoharie grit.	E. New York.	M. Devonian.
Schoharie stage. Includes Schoharie grit and Esopus shale.	New York.	M. and L. Devonian.
Schunnemunk conglomerate.	New York.	U. Devonian.
Scioto slates and shales (of D. D. Owen). Replaced by Ohio shale.	S. Ohio.	U. Devonian.
Scutella limestone. Underlies Oriskany.	E. New York.	L. Devonian.
Second Pentamerus limestone.	New York.	L. Devonian.
Selinsgrove shale. Underlies Selinsgrove lower limestone.	Central Pennsylvania.	L. Devonian.
Selinsgrove upper sandstone.	Central Pennsylvania.	M. Devonian.
" lower "		
" upper limestone.		
" lower "		
Sellersburg limestone (of E. M. Kindle (1899). Includes Sellersburg limestone of Seibenthal, "Encrinal" limestone of early reports, and Beechwood limestone member of Butts.	S. Indiana, N. Central Kentucky.	M. Devonian.
Seneca limestone.	Central New York.	M. Devonian.
Senecan group. (Includes Portage beds, Genesee shale, and Tully limestone.)	New York.	U. Devonian.
Sevy dolomite.	W. Utah (Gold Hill District).	M. Devonian.
Sextant formation. A continental formation.	Abitibi River, N. Ontario.	L. or M. Devonian.
Shaffer shale (of J. M. Clarke, 1903). Levanna shale of Cooper (1930) replaces this shale because of better exposures.	W. Central New York.	M. Devonian.
Shamokin black shale member (of Marcellus formation).	Central Pennsylvania.	M. Devonian.
Sharon syenite.	S. E. Massachusetts.	Devonian (?).
Shawangunk grit.	New York.	Devonian.
Shawmut group.	E. Massachusetts.	Devonian or Carboniferous.
Sheffield formation.	Central N. Iowa.	U. Devonian.
Shelby limestone. This is a synonym for Geneva limestone which has priority.	Central Indiana.	M. Devonian.

Shell Rock limestone. Defined by A. O. Thomas (1927). Studied later by Fenton, Belanski, and Laudon.	Central N. Iowa.	U. Devonian.
Sherburne shale. (W. W. Mather, 1843.) Not clearly defined.	Central S. New York.	M. Devonian.
Sherburne flagstone member (of Portage formation). L. Vanuxem (1840).	E. Central New York.	U. Devonian.
Shohola formation. Comprises continental beds under Damascus red shale.	N. E. Pennsylvania.	U. Devonian.
Shriver limestone. Underlies Ridgeley sandstone. Oriskany group.	N. W. Maryland and S. W. and Central Pennsylvania.	L. Devonian.
Shriver chert member. In Oriskany group.	Central Pennsylvania, Maryland, Western Virginia, and West Virginia.	L. Devonian.
Shumla sandstone member (of Chemung formation).	W. New York.	U. Devonian.
Silica shale. In Traverse formation.	N. W. Ohio (Lucas Co.).	M. Devonian.
Silver Creek limestone member (of Sellersburg limestone).	S. Indiana and Central N. Kentucky.	M. Devonian.
Silver Creek shale.	New York (Chatauquay Co.).	U. Devonian.
Silver shales.	S. W. New Mexico.	U. Devonian.
Simonson dolomite.	W. Utah.	M. Devonian.
Simpson shale. With Portage fauna.	Head of Upper Mackenzie River Valley.	U. Devonian.
Six Mile shale member. Top of Middlesex shale formation.	Central New York (Ithaca region).	U. Devonian.
Skaneateles shale. In Hamilton group.	Central and W. New York.	M. Devonian.
Skidders Eddy limestone. In Catskill formation.	N. E. Pennsylvania.	U. Devonian.
Skunnemunk conglomerate.	New York and N. New Jersey.	U. Devonian.
Slave Point limestone.	Great Slave Lake District.	M. Devonian.
Slide Mountain conglomerate.	E. New York (Catskill Mountains).	U. Devonian.
Smethport magnafacies. Equivalent of Catskill and includes Cattaraugus parvafacies.	N. W. Pennsylvania.	Devonian or Carboniferous.
Smethport shale member (of Knapp formation). Replaced by K. E. Caster (1934) with Kushequa shale member.	N. W. Pennsylvania.	Devonian or Carboniferous.
Snyder Creek shale.	Central Missouri.	U. Devonian.
Solon limestone.	E. Central Iowa.	M. (?) Devonian.

Solsville member (of Marcellus).	Central New York.	M. Devonian.
Somerville slate.	E. Massachusetts.	Devonian or Carboniferous.
Sonneau Brook beds. (E. M. Kindle, 1938.) Member Gaspé sandstone and correlated with Four Mile Brook shale member of Heppel sandstone.	Gaspé Peninsula, Quebec.	U. Devonian.
Sonyea formation. Applied by Chadwick (1933) to combined Middlesex and Cashaqua. Name Sonyea renounced later by Chadwick.	W. New York (Genesee River region).	U. Devonian.
Spirifer zone of the Cerro Gordo substage.	Central-N. Iowa.	U. Devonian.
'Spirifer pennatus beds' part of Wapsipinicon limestone.	Central-E. Iowa.	M. Devonian.
Spirifer macrothyris zone (of Venus member Columbus limestone).	Central Ohio.	M. Devonian.
Spotted Bear limestone member. Top of Jefferson limestone.	N. W. Montana.	M. Devonian.
Spring Grove member (of Wapsipinicon limestone).	E. Iowa.	M. Devonian.
Springvale sandstone. Carries Onondaga fauna.	Ontario (Hagersville region).	M. Devonian.
Squantum tillite member (of Roxbury conglomerate).	E. Massachusetts.	Devonian or Carboniferous.
Square Lake limestone.	N. E. Maine (Aroostook Co.).	L. Devonian. (Helderberg).
Squaw Bay limestone.	N. E. Michigan.	L. Devonian.
Stafford limestone member (of Skaneateles shale).	W.-Central New York.	M. Devonian.
Staghorn Point submember (of Otisco member of Ludlowville shale).	Central New York.	M. Devonian.
Standish flagstone member (of Genesee shale).	W.-Central New York.	U. Devonian.
Starbird formation.	British Columbia.	U. Devonian.
Starrucca shale and sandstone. In Catskill or Chemung formation.	N. E. Pennsylvania.	U. Devonian.
State Quarry limestone.	Central E. Iowa.	U. Devonian.
Stewart andesites.	New Brunswick.	Devonian.
Stony Brook beds. In Chemung formation.	N. E. Pennsylvania.	U. Devonian.
Stony Lonesome bed. Name has no standing.	N. W. Pennsylvania (Warren Co.).	Devonian or Carboniferous.
Stormville sandstone.	N. half of New Jersey and N. E. Pennsylvania.	L. Devonian. (Helderberg).

Stormville shale.	N. E. Pennsylvania.	L. Devonian.
Stormville conglomerate.	Central and N. E. Pennsylvania.	L. Devonian.
Stormville limestone. In Helderberg limestone.	N. E. Pennsylvania.	L. Devonian.
Striatula zone of Cerro Gordo substage.	Central-N. Iowa.	U. Devonian.
Styliolina or Genundewa limestone.	New York.	U. Devonian.
Sub-Blairsville red shale member (of Chemung formation).	W. Pennsylvania.	U. Devonian.
Sub-Olean conglomerate. Replaced by Knapp formation.	N. W. Pennsylvania and S. W. New York.	Mississippian or U. Devonian.
Sugar Hill quartz monzonite.	N. W. New Hampshire.	U. Devonian or Carboniferous.
Sugar-Loaf dacites.	New Brunswick.	Devonian.
Sultan limestone.	Nevada (Gold Springs Quadrangle).	U. or M. Devonian
"Sunbury Calciferous sand-rock."	Central Ohio.	Mississippian and U. Devonian (?).
Swan Creek phosphate. Overlies Hardin sandstone and underlies Chattanooga shale. Often becomes apparently Hardin sandstone.	W. Tennessee.	U. Devonian or Mississippian.
Sweetland Creek shale.	S. E. Iowa and W. Illinois (?).	U. Devonian or Mississippian.
Sycamore Creek sandstone. Has been treated as a member of Jerome formation.	N. E. and Central Arizona.	U. Devonian.
Sycamore sandstone member (of Chattanooga shale).	S. W. Missouri, N. Arkansas, and E. Oklahoma.	Mississippian or U. Devonian.
Sylvania sandstone.	N. W. Ohio and Michigan and W. Ontario.	L. Devonian. (Helderberg)
Sylvania dolomite.	N. W. Ohio and Michigan (lower peninsula, S. E. part).	L. Devonian.
Table Rock sandstone.	W. New York (Genesee River).	U. Devonian.
Tahkandit series.	Alaska (Yukon River).	Devonian (?) to Permian.
Takotna formation.	S. Alaska.	M. Devonian.
Taku group.	British Columbia.	Devonian (?).
Talford schist.	N. W. New Hampshire.	L. Devonian (?).
Talon formation.	Quebec.	Devonian (?).
Tanners Hill quarry rock. In Conewango formation.	N. W. Pennsylvania.	Mississippian or U. Devonian.
Tanners Hill red. In Conewango formation.	N. W. Pennsylvania.	Mississippian or U. Devonian.
Taylorville formation.	California (Taylorville region).	Devonian.

Temple Butte limestone.	N. Arizona (Grand Canyon).	U. (?) Devonian.
Tentaculite limestone. Included in Helderberg.	New York.	L. Devonian.
Terra Cotta series.	S. E. Alaska.	Devonian (?), Silurian, Ordovician.
Texado group.	British Columbia.	Devono-Carboniferous (?).
Thiensville formation.	S. E. Wisconsin.	Devonian.
Three-Forks shale and three-forks limestone.	Montana, W. Wyoming, Idaho, N. Utah, and Yellowstone Park.	U. Devonian.
Thunder Bay series.	N. E. Michigan.	M. Devonian.
Thunder Bay shales. It is suggested by E. R. Pohl (1930) that for beds below Encrinal limestone in Ontario Olen-tangy be dropped in favor of Thunder Bay shales.	N. E. Michigan.	M. Devonian.
Tichenor limestone member (of Ludlowville shale).	Central to W. New York.	M. Devonian.
Tidioute shale member.	N. W. Pennsylvania (Crawford Co.).	Devonian or Carboniferous.
Tinkers Falls member. Basal member of Tully formation.	Central New York.	U. Devonian.
Tioga magnafacies.	Central N. Pennsylvania.	Devonian or Carboniferous.
Tiona sand. Drillers' term.	N. W. Pennsylvania.	U. Devonian.
Titelna volcanics.	Alaska.	Devonian.
Tonzono group.	Central S. Alaska.	Silurian, Devonian, and Carboniferous.
Topache limestone.	S.E. Utah.	Devonian (?) and Mississippian.
Totatlanika schist.	Alaska.	Silurian or Devonian (?).
Towanda sandstone. In Chemung formation.	N. E. Pennsylvania (Bradford Co.).	U. Devonian.
Traverse formation. ⁹	Michigan.	M. Devonian.
Trigonotreta zone of Mason City substage.	Central-N. Iowa.	U. Devonian.
Trimmers Rock sandstone.	S. Central Pennsylvania.	U. Devonian.
Triphammer shale member (of Ithaca facies subgroup).	Central New York (Ithaca region).	U. Devonian.
Trousdale shale.	Central Tennessee.	U. Devonian.
Tufts quartzite member (of Cambridge slate).	E. Massachusetts.	Devonian or Carboniferous.
Tully limestone.	New York and Pennsylvania.	U. Devonian.

⁹ For the numerous subdivisions of this formation, see Wilmarth, M. G. (1938) U. S. Geol. Survey, Bull. 896, p. 2176.

Tully pyrite layer.	W. New York.	U. Devonian.
Tuna conglomerate. Included in Venango formation.	Pennsylvania.	U. Devonian.
Tunangwant conglomerate.	N. W. Pennsylvania and S. W. New York.	U. Devonian or Mississippian.
Tunbridge granite.	N. E. Vermont.	Devonian.
Turkey Ridge sandstone member.	Central Pennsylvania.	M. Devonian.
Turtle Mountain group.	Alberta.	Devonian and Carboniferous.
Ulsterian stage or epoch. Includes Onondaga limestone and Schoharie grit (N. Y. State Survey usage.)	New York.	M. Devonian.
Unadilla formation. Base redefined by G. A. Cooper (1935) and placed above top of fimbriata zone of Tully with top at base of Oneonta sandstone.	E.-Central New York.	U. Devonian.
Union formation.	Nova Scotia.	Devonian or Carboniferous.
Union shale. Corresponds to Three Forks shale.	W. Central Montana.	U. Devonian.
Union Springs member. In Marcellus shale.	Central New York.	M. Devonian.
Upper Devonian series. Includes all Devonian sediments down to base of Tully.		
Valentine limestone member (of Sultan limestone).	S. E. Nevada.	Devonian.
Vallendar formation.	S. E. Alaska (Ketchikan region).	M. Devonian.
Valley Head sandstone.	E. West Virginia.	U. Devonian.
Van Etten zone of <i>Tropidoleptus</i> .	S. Central New York.	U. Devonian.
Venango formation of Lesley. Topmost division of Chemung formation.	Central N. Pennsylvania.	U. Devonian.
Venango monothem. Includes beds between base of Riceville and base of Panama conglomerate.	N. W. Pennsylvania.	Devonian or Carboniferous.
Venango oil sand group of I. C. White (1881).	N. W. Pennsylvania.	U. Devonian or Carboniferous.
Venice member Columbus limestone. Includes "bone bed" at top.	N. E. and Central Ohio.	M. Devonian.
Vergent series—Portage and Chemung.	Pennsylvania.	U. Devonian.

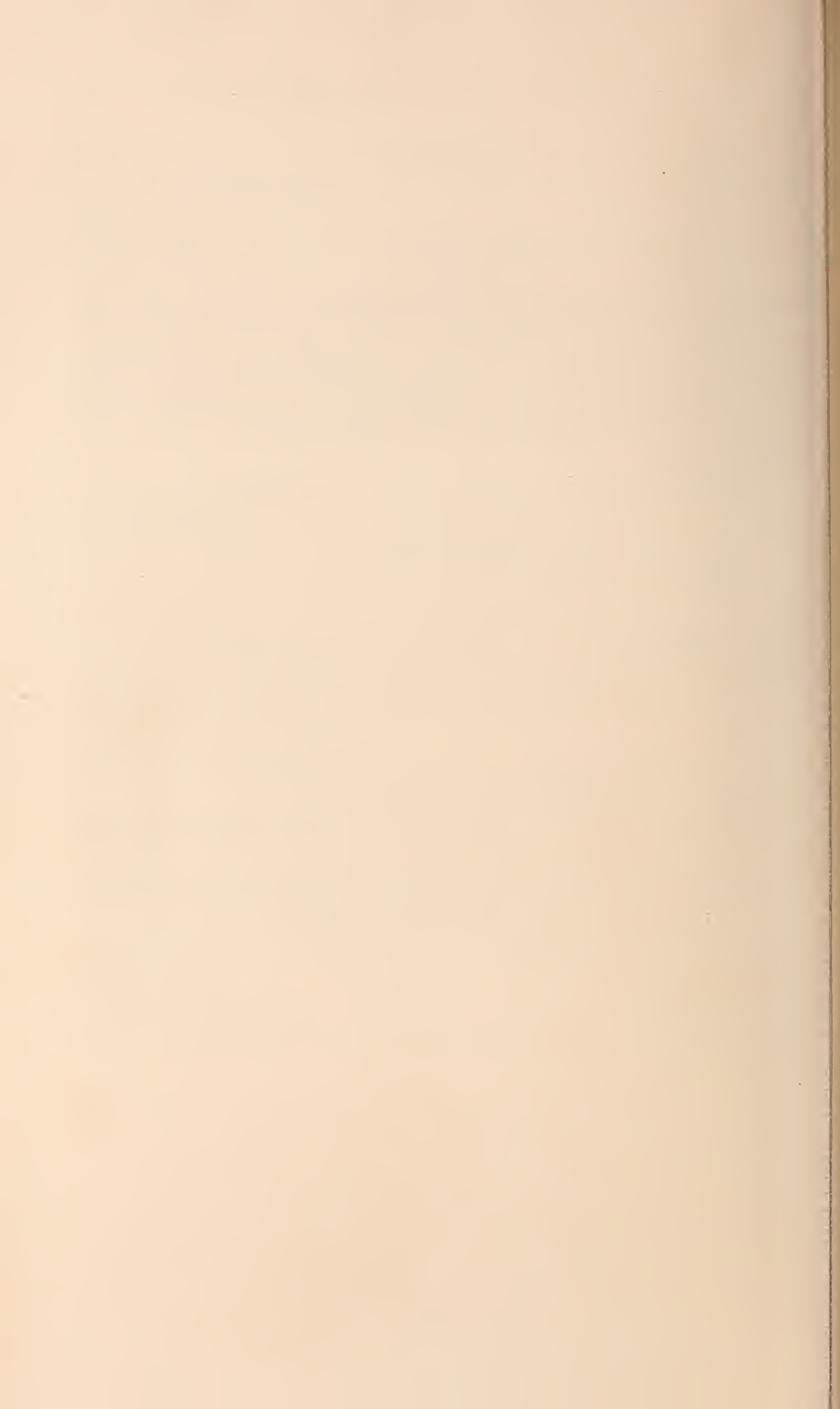
Vernon limestone.	W. Massachusetts (Berkshire Hills) and S. E. Vermont.	Devonian.
Victoria series.	British Columbia.	Devonian (?) or Carboniferous.
Vinton phase (of Otis limestone of Norton).	Central E. Iowa.	M. Devonian.
Volusia shale. Fourth from top of Upper Devonian formations in Chautauqua Co.	W. New York (Chautauqua Co.).	U. Devonian.
Walker shale. Underlies Kimberling shale and overlies Giles formation. Distinguished by its black color from the green Kimberling into which it grades.	S. W. Virginia.	U. Devonian.
Wanakah shale member (of Ludlowville formation). Graban (1917) designated by this name the lower Hamilton shales underlying the Encrinal limestone of Eighteen-mile Creek, Cooper (1930) traced these beds from Lake Erie to Seneca Lake.	W. New York.	M. Devonian.
Wapsipinicon limestone.	E. Iowa and S. W. Illinois.	M. Devonian.
Warren oil sand group. Drillers' name for 300 feet of Chemung sands.	N. W. Pennsylvania.	U. Devonian.
Wasatch limestone.	N. E. Utah.	Mississippian to Ordovician.
Waugh sand. Drillers' name.	W. Pennsylvania.	U. Devonian.
"Waverly" shale. (Also "Waverly Blue shale" of some early reports.)	S. E. Ohio.	Mississippian or U. Devonian.
Webster group. Includes chert, sandstone, quartzite, and rarely oölitic bands.	S. W. Missouri (Green Co.).	Devonian.
Wellesley formation.	E. Alaska.	Devonian or Carboniferous.
Wellsburg sandstone member (of Chemung formation).	Central and W.-Central New York.	U. Devonian.
West Brook member. Top member of Tully limestone.	Central New York.	U. Devonian.
West Dummerston granite.	S. E. Vermont (Windham Co.).	Devonian.
West Fork formation.	N. Alaska.	U. Devonian.
West Hill formation. Lies between Nunda sandstone above and Grimes sandstone below.	W. Central New York.	U. Devonian.

West Jefferson sandstone. Underlain by Columbus limestone.	Central Ohio.	M. Devonian.
West Range limestone.	E. Nevada.	U. Devonian.
West River shale member (of Genesee shale group). Previously called "Upper Genesee shale."	W.-Central New York.	U. Devonian.
West Roxbury slate.	E. Massachusetts.	Carboniferous or Devonian.
Westfield shale member (of Chemung formation).	W. New York.	U. Devonian.
Westfield phase (of Otis limestone). Represents basal conglomerate part of Otis limestone resting on Silurian.	Central E. Iowa.	M. Devonian.
Wetmore conglomerate member.	N. W. Pennsylvania and S. W. New York.	Devonian or Carboniferous.
Whetstone Branch shale.	N. E. Mississippi.	U. Devonian.
White Mountain magma series.	Central and N. New Hampshire.	U. Devonian or Carboniferous.
White Ridge limestone. Basal member of Jefferson limestone.	N. W. Montana.	M. Devonian.
Whitecap schist series.	British Columbia.	Devono-Carboniferous.
Widder beds. These include beds above Olentangy shale with a Hamilton fauna and flattened concretions. Type locality at Widder Village near Thedford, Ontario.	Ontario, Pennsylvania, Ohio, and Michigan.	M. Devonian.
Wild Cat coquinite. Replaced by Roystone coquinette member of Devonian age. (K. E. Caster, 1934).	N. W. Pennsylvania (McKean Co.).	U. Devonian or Mississippian.
Williams Brook coquinite. In Ithaca facies subgroup.	Central New York, Ithaca District.	U. Devonian.
Williams Canyon limestone.	E. Colorado.	Devonian (?).
Williams Island limestone. This limestone has yielded <i>Hypothyryrus cuboides</i> .	N. Ontario (Abitibi River).	U. and M. Devonian.
Windom shale member (of Moscow formation).	W. New York (Lake Erie region).	M. Devonian.
Winnipegosis dolomite formation. Contains most easterly Canadian occurrence of <i>Stringocephalus burtini</i> .	Manitoba.	M. Devonian.
Wisconsin shale and sandstone. (Top member Portage group.)	W. and W.-Central New York.	U. Devonian.

Wittenberg shale.	S. E. Missouri.	M. Devonian.
Wolf Creek conglomerate lentil. At base of Cattaraugus formation.	S. W. New York.	U. Devonian or Mississippian.
Wolfpen tonolite.	E. Central Massachusetts.	Devonian (?).
Woodbury granite.	N. E. Vermont.	Devonian.
Woodchopper volcanics.	N. E. Alaska (Eagle-Circle District).	M. Devonian.
Woodcock sandstone. Uppermost member of "Venango group."	N. W. Pennsylvania (Erie Co.).	Devonian or Carboniferous.
Woodford formation.	Oklahoma.	Devonian and Mississippian.
Woodford chert.	Central and S. E. Oklahoma.	U. Devonian or Mississippian.
Woodmont shale member (of Jennings formation).	N. West Virginia, W. Maryland, and S. Pennsylvania.	U. Devonian.
Woodpecker limestone.	Nevada (Eureka District).	Devonian.
Wrightsville conglomerate.	N. W. Pennsylvania (Warren Co.).	Mississippian or U. Devonian.
Yellow Creek beds. Includes at top: Carmac limestone (Mississippian) and Whetstone Branch formation (Upper Devonian), Island Hill formation, and New Scotland limestone (Lower Devonian).	N. E. Mississippi.	Devonian and Mississippian.
York River beds. Represent older beds of Gaspé sandstone. Named by H. S. Williams (1910).	Gaspé Peninsula, E. Quebec.	M. Devonian.
York River facies (E. M. Kindle, 1938). Represents the marine facies of the Gaspé sandstone west of the Peninsula facies.	Gaspé Peninsula, E. Quebec.	M. Devonian
Yellow Leaf quartz schist.	E. Alabama.	Devonian.
York Harbor biotite granite.	S. W. Maine.	Devonian (?).
Younkin formation. Only in wells.	N. Central Kansas.	Devonian or Silurian (?).

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(1929) Maryland, Chart II; Massachusetts, Chart; Michigan, Chart I; Minnesota, Chart; New Jersey, Chart; Tennessee, Charts I, II, III, IV; Virginia, Chart II; West Virginia, Charts I and II; Wisconsin, Chart.
(1930) Indiana; Iowa, Charts I, II; Kentucky, Charts I, II; Missouri, Charts I, II; Ohio, Chart I; Texas, Chart II; Utah, Charts I, II.
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